New Orleans Medical
and
Surgical Journal

Vol. 96 JULY, 1943 No. 1

IN MEMORIAM*

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NEW ORLEANS

In keeping with requirements and precedence, I am entrusted with the painful duty of presenting for your recognition a list of those members of our Society who have been called by the "Grim Reaper" since our last meeting. Would that I had the words and oratorical power and time properly to instill in your minds just how much their loss means to the medical profession and community and why we so sincerely mourn their departure.

With this thought in mind would it not be a wise admonition to cultivate a closer and more friendly relationship with each other during this short span of life, to the end that we may be able to have a better understanding of each other, professionally and socially. Basically we are all brothers in the flesh, having a common obligation designated by the degree of Doctor of Medicine. Thus we could share in a more personal manner, the joy and happiness of success and better succor and support in hours of misfortune. At such a time everyone needs a friend. We could thus be a support in the approach to the ranks of the passing stream, clothed with assurance and satisfaction so aptly expressed by the Biblical character, Paul, in his epistle: "I have fought a good fight, I have finished my course, I have kept the faith."

Yes, their passing could then be viewed like a glorious and glamorous sunset, the sun falling lower and lower beyond the horizon, illuminated by a galaxy of colors and studded by the planets and stars, each attesting to some outstanding accomplishment or success in his career. They will shine long after the sun has fallen, precluding the approach of evening, followed by the darkness of night and the dawn of another day. Thus time passes on.

Many of these departed you and I have known; some intimately. We know how consecrated, sacrificial and devoted they were in their professional activities. We know how much they have contributed to the preservation of the American form of living—to the American form of practicing medicine. With these implications and edicts to halo their memory and in keeping with the spirit of the times, we should redouble our efforts to approach nearer the utopia in order that their principles and sacrifices may not have been in vain. The reflections learned from their contributions must be activated and utilized in the strengthening of our great calling. They would not have it otherwise. We realize their loss to the community both professionally and socially. In the confidence of their aggrieved patients they will be very hard to replace, and there will be a void space in our hearts when we reflect on their passing. They have left their imprints on the sands of time—what a profession!

In a group obituary it is impossible to portray the many individual outstanding characteristics of each life. A bibliographical sketch is recorded in the official files. If you will kindly stand, I will read the list of deaths for 1942-43:

*Memorial address read before the sixty-fourth annual meeting of the Louisiana State Medical Society, May 3, 1943.

Name	Address	Date of Death
Samuel A. Barkoff	New Orleans	1943
Thomas B. Bird	Baton Rouge	1942
George S. Brown	New Orleans	1943
Edwin A. Carlisle	East Point	1942
Harold G. F. Edwards	Shreveport	1942
John B. Elliott	New Orleans	1943
Charles J. Gordon	Sicily Island	1942
S. E. Graham	St. Francisville	1943
John K. Griffith	Slidell	1942
Gordon A. Grimland	Lafayette	1942
Noel S. Holmes	Eros	1942
Clifford H. Irion	Benton	1942
Alfred Jacoby	New Orleans	1942
David A. Lines	New Orleans	1942
Antoine J. Morat	Colfax	1942
J. Franklin Mouton	Lafayette	1942
A. J. Newman	Hammond	1943
Adolph Noha	New Orleans	1942
Malvin W. Owens	Bonita	1942
Fleator Palmer	Homer	1942
Frank P. Perret	Jeanerette	1943
Samuel H. Scruggs	Cloutierville	1942
J. Holmes Smith, Jr.	New Orleans	1943
Joseph B. Thompson	Bogalusa	1943
James C. Willis, Sr.	Shreveport	1942
Marshall W. Wooten	Mangham	1943
Henry B. Womble	Gilbert	1942
Wm. P. Yerger	Tallulah	1943

May their souls rest in peace.

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ANCIENT PROCESSES IN A SCIENTIFIC AGE

THE DEVELOPMENT OF USEFULNESS*

C. ANDERSON ALDRICH, M. D.
CHICAGO

Every one who buys a valuable piece of machinery expects, as a matter of course, to look into the matter of how it is intended to work. That is the least one can do in order to make good use of his investment. To protect a machine from damage it is necessary to understand its internal workings. That is why automobile manufacturers, for instance, print colorful and detailed booklets of instruction telling new owners all the dos and don'ts about intelligent driving of a car. Before attempting any operation of a bright and shining new machine, we take it for granted that proper methods of starting, stopping, steering and shifting gears will be learned. And we choose our fuel and lubricating oil with the greatest of care.

But when it comes to steering and operating a much more intricate mechanism like a human baby, we seem to take it for granted that no particular study or preparation is necessary—that papa or mama, or both, and sometimes the doctor, can step right into the driver's seat and always be right. We expect babies to be fool-proof. No wonder our behavior and child guidance clinics are cluttered up with the wrecks which result from this careless sort of driving.

Perhaps no other mistake hampers human progress as much as this idea that adults are inherently right in their management of children, no matter how little they have prepared themselves for their perplexing task. This conception has, in the past few generations, lead to the adoption of a complex set of rules and regulations for children which ignores almost completely the way in which human beings are built to run. The misunderstanding of children which results when they fail to respond to such regimes is a serious matter. It seems bad enough to have one member of a family misunderstood by the group; but, when two or three whole generations are misunderstood, the results are devastating.

There was possibly some excuse for this somewhat arrogant attitude during the years when we were "child centered" and as yet knew little about the subject of growth and development. But, now, with the generous provision of information on this subject which has come out in recent years, it is hard to see how any modern parent or doctor can approach his handling of children with anything but a respectful attitude. It surely is just as important for people to recognize the dynamic drives of babies toward adequate living as it is for the automobile driver to understand what happens when he steps on the accelerator of his car.

In this paper an attempt will be made merely to outline some of these growth

*Read before the Orleans Parish Medical Society, January 25, 1943.

tendencies and to consider briefly their implications in modern child care. Only some of the more obvious forces will be touched upon and cited as illustrations, and the actual steps of growth will be skimmed over rapidly in order to point out their useful nature.

In order to understand children, one must begin at the start and study the situation of the newly born. Each well-born child, as he emerges into the light of day, is nature's late model of homo sapiens, 1943. But, unlike the automobile producers, nature does not equip the chassis with all the latest gadgets; she grows these out during childhood. It is probably a fortunate thing for us that the forces of evolution do not modify yearly models with the greatest of ease. Nature sacrifices variety for stability, and in the place of structural changes, bequeaths our children with an amazing pliability in the developmental process. That is how it comes about that our modern babies, born in the image of primitive ancestral infants, are able to adjust themselves so well to a culture so entirely strange to them. This adaptability to change is one of man's most useful assets. It is this quality which has made possible the thin veneer of civilization which we have so painfully attained.

This conservatively modelled, but highly adaptable baby, is entirely mechanical at first, unable to perform any voluntary acts. Complex reflexes and behavior patterns which are designed to make him successful in his stern, early struggle for existence control his behavior. They supervise such important functions as breathing, eating, eliminating, and sleeping which, obviously, could not be entrusted safely to an immature will.

These baby acts, moreover, are intimately controlled by an active set of emotions which lie close to the surface and result in violent behavior at the slightest threat to the child's security. When an infant cries furiously because he is fastened or held too securely, it is his emotional signal of danger which brings on the outbursts, a protective reaction. These emotions are extremely valuable from the start and will supervise much of his later activity as well.

On the other hand, voluntary behavior and conscious individuality become evident in a gradual way only after nerve axones become myelinized, a process which begins at birth and goes on throughout the growth period. In studying personality, therefore, this development of the nerves must attract our eager attention. This is the part of growth which leads to the usefulness of an individual. And it should be kept in mind, for the sake of good perspective, that most of this usefulness originates in the baby's brain and nervous system, rather than in that of his parents. It is also true, and this is our real challenge, that a child's ability to become competent depends to a considerable degree upon the sort of support that inherent growth gets from the environment. How parents, nurses and doctors react to the baby is of utmost importance.

With this background, let us see how our instinctive baby gradually takes over the voluntary control of his destiny. Although it cannot be scientifically proved, it is almost certain that the first voluntary act is fixation of the eyes on a familiar object, his mother's face for instance. In this barely perceptible act we can see the faint beginning of one of his most valuable functions, vision. This ability grows so rapidly that by four months of age it is a highly competent factor in conscious existence and is closely coordinated with many other systems of the body. By this time most of the intricate muscular movements which enable him to turn his eyes to objects and forms are already under voluntary control. However, the development of vision is not by any means complete, as it will continue building up its intricate brain connections for many years to come.

At some time near the end of the first month it is quite easy to demonstrate another welcome evidence of volition, the smile. The growth of this charming and useful attribute makes possible a baby's whole gamut of pleasant responses and initiates the sense of humor which develops

so rapidly that he can rollick with the best of us in just a few weeks. In later life this will be of great value as a safety valve in a world of struggle. Most of our great national heroes and leaders have had to be well fortified with a sense of humor in order to stand the strain.

Almost immediately after the appearance of the light touch, he starts to use his voice. No matter how unresponsive his surroundings, he begins to "oo" and "ah." Not only does he make sounds, but he sets about practicing his new-found talent throughout his waking hours. It is interesting to see how his lips and tongue work over articulation, often getting voice all mixed up with smiles. But he persists in his work until by the second year he can produce short sentences and say more words than we usually take the trouble to count.

Within a month or so of the time that speech begins, most babies make a start at controlling the muscles in the front of their necks so that they can crane their heads forward to investigate their surroundings. This simple act sets in motion a long series of voluntary postural changes which in rapid succession enable him to roll over, to sit, crawl, pull to a stand, walk with help, stand alone, and finally to walk off proudly following his protuberant stomach. All babies go through this orderly sequence in the art of going places whether or not we enter the picture.

At about four months of age babies begin their work at manual dexterity. At first they seem to see their hands, then gradually they get partial control over their gross movements. They reach out gropingly for rattle or bottle, then learn to grasp, control, and finally to manipulate familiar objects in relation to other things. After these large movements of the hands have progressed, the finer control of fingers comes under volition. In the latter part of the first year we see babies pointing their forefingers at a small speck, then acquiring the ability to bring the thumb in apposition so that the crumb can be picked up. This is an exclusively human accomplishment and leads to our superior ability to fashion implements. By constant practice at combining coarse and fine movements, a baby in his second year becomes able to feed himself in a clumsy way with our sophisticated tools. But, more important still, he learns to play with toys, an activity which must be considered his only available way of working.

From what has just been said, it is obvious that before the first half year is over most of the abilities which make a child a useful member of society have emerged. During all the rest of his life these early strivings will continue to develop, though the speed of change will diminish as he grows older. It is precisely because of the rapid rate of early development that this age is so important, for at no other time is it so easy to promote or hinder his progress.

Along with this rapid acquisition of the tools for living in our culture, babies also develop from within a set of habits which stay with them for the rest of their days. The most important of these concern such vital functions as eating, eliminating and sleeping. And it is important to note that these fundamental habits are all built up by the same simple methods; the habitual act relieves discomfort and is therefore pleasant.

A baby first learns the joy of eating from the relief of hunger pains which follows his nursing. The rhythm of his eating habits is established and carried on by the rhythm of his inherent hunger mechanism.

An infant develops regular habits of elimination because uncomfortable distention of the rectum or bladder is relieved by evacuation of these organs. Here again, his own inherent rhythms determine the exact timing of eliminative efforts.

In the same way, a child becomes uncomfortable when he is tired, and seeks sleep as a pleasant relief. We find, also that the repeated sequences of awakening, activity, growing tired and falling asleep are rhythmic individual matters characteristic of each child.

In order to be useful to a person, then, vital habits must be constant repetitions of acts which are pleasant and relieving.

Going back to the original analogy, a brief outline has been given of how babies are "supposed to work" during their breaking in period. Can we get any suggestions from this as to how we should "drive the car?" It is certainly logical, if we are to get the most out of these growth forces, that we give emerging abilities a chance to expand and that we respect infantile attempts at habit formation.

Such a policy would have to allow early eating experiences to occur under the stimulus of hunger contractions rather than according to any routine or schedule dominated by the clock. It would likewise respect a child's ability to choose from a suitable diet the amount he desires to eat. In the realm of elimination, a careful driver would pay much more attention to the development of rhythmic bowel and bladder control in the baby than to the application of artificial stimuli and compulsions, enemas and suppositories. When it comes to habits of sleep in the early years, a considerate parent would see to it that sleep was allowed when the baby's lids began to droop, would pay strict attention to ideal resting environment, and would minimize such considerations as set numbers of hours to be spent in bed. We have every evidence from recent research that when babies are allowed to develop these habits without dictation, they emerge with a set of useful tools for everyday living.

In considering the management of emerging abilities, it is equally obvious that our sympathetic support is needed if maximum growth is to occur. The effects of environment on the development of a baby can be as beneficent as the spring rains or as devastating as the scorching sun in a drought. The secret of a favorable environment lies in developing an attitude on the part of adults which expects a child to act his age. This attitude not only should expect such behavior, it must be proud of it. The attainment of this state of mind might be called the pediatric approach to mental hygiene. It enables one to see each inevitable change in growth as a useful step toward competent behavior. It helps us to ignore the inadequacies of the preliminary steps in the light of steady progress toward the ultimate goal.

This attitude is needed most during the second year of life, in the well known "no-no" period. During this dynamic year every child is intensely busy with the job of perfecting the abilities which sprouted in the first year. As a result, he runs about prying, handling, investigating and generally getting under foot, making a nuisance of himself. When our best furniture and possessions are threatened, it is hard to realize that this behavior is necessary for future growth. Nevertheless, the evidence clearly shows that in order to help growth we must so change the surroundings that these developmental needs can be fulfilled. It is desirable that he learn to walk and run, to play with tops, to "help with the sweeping," to toss balls, to handle and manipulate, to call out and yell, to fit things together and to take them apart, and the only way by which he can learn is by incessant practice. This he demands.

The great lesson children have to learn at this age is selectivity—that this thing can and that thing cannot be done. If each lesson is taken alone, infants learn rapidly. But, when everything is thrown at them at once, they become confused and cannot learn.

It is also important that infants at this age continue to feel their early affection for their parents. This is fostered by adult approval and applause of childish efforts, no matter how unsuccessful these may be when judged by grown up standards. When parents lose this relationship they hinder the development of two-year-olds and set up the well known "negativism" of the three-year-olds.

One of the most important results of this tolerant attitude toward infant behavior is that it enables us to realize how growth proceeds in later years. We can see a purpose in nature's slow, step-by-step progress. We can understand how it is that children

read easily only after their brains have developed to the reading stage, rather than at any particular birthday. We can understand why handedness should be respected and not "changed." We can see that obedience should always be subservient to self-discipline. We can even become unemotional enough to understand that what we call masturbation in a baby is really only a stepping stone in sexual growth. And, finally, we may be able to approach the problem of our adolescents with the conviction that it is right for them to mature, proper for them to take on adult responsibilities, and desirable for them to love, mate and have children of their own—all his, even if it does relegate us to the status of old folks. If we can take this, then we too have really grown up.

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HISTORY OF YELLOW FEVER IN NEW ORLEANS*

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NEW ORLEANS

The time was the summer of 1905. The place was New Orleans—New Orleans, the gay, romantic Queen City of the South, noted for its charm, continental atmosphere, and good living. New Orleans, the terminus of the great Mississippi, the center of commerce of the Mississippi Valley, and where people did not let business interfere with pleasure too much. However, this July 12, 1905, was a date long to be remembered by those who had lived there for any length of time, for on that day a public announcement was made which heretofore was more fearful than the wail of the air raid siren of today. Another yellow fever epidemic had started. But let us look back that we may understand the significance and terror of this message.

In 1718 New Orleans was founded by Bienville in a bend of the Mississippi. At that time it was little more than a clearing at the side of the river, and was surrounded by swamp lands. The city grew, and in 1722 was made capital of the Louisiana territory. During this time, and for five years thereafter, New Orleans suffered inundations of the Mississippi every year. A series of canals were built to the lake and a system of irrigation ditches was set up to relieve these floods. The first levee was erected in 1827, which protected the city from the river thereafter.

With this setting, New Orleans was an ideal spot for infection, disease, and pestilence. Due to its position on the river, it served as a great port, both for foreign vessels and river commerce. Its warm climate, surrounding swamps, and open ditches served as a perfect breeding spot for insects. In fact, since its very founding, New Orleans had suffered many epidemics—plague and smallpox were the most notable ones, but there were several others, the strangest of which was the epidemic of mad dogs. This odd situation was dangerous enough to keep people off the streets, and many deaths from rabies were reported. But New Orleans' greatest scourge, yellow fever, had not yet come. Although some cases had been reported in 1769 which might have been the "Yellow Jack," the first positive case was not reported until 1796. The exact source of this has never been fully determined, but today most people believe that the fever was brought to this country with slaves from Africa, although it might also have been introduced from infections picked up in the West Indies and carried here on merchant ships. At any rate, it had arrived. Fortunately, the epidemic did not prove to be a very serious problem; few were stricken, and the mortality was low. In fact, for 23 years afterwards no one worried about yellow fever very much. In 1819 the first severe blow fell. In that year the Yellow Jack struck in all its violence, there were 2,000 deaths that summer and fall in this city, then of 26,000 population. One-thirteenth of the people were killed in less than six months by this dread disease.

Thereafter, epidemics occurred in New Orleans with an "irregular irregularity"—a phrase used to describe auricular fibrillation, but a condition here even more dan-

*Read before the Orleans Parish Medical Society, July 13, 1942.

gerous. During the next 55 years there were about thirty-five epidemics, eleven of which struck a large percentage of the population and produced a high death rate. These did not come in alternate years, but sometimes hit for four or five successive years and then perhaps would skip two or three, only to return again the next. There was no predicting when the next one would strike.

Of course at this time the etiology and epidemiology were unknown, but the city board of health set up a quarantine to try to check the fever. The first quarantine was established in 1821 and continued through 1824. However, during this period, a yellow fever epidemic struck the city every year, so the quarantine was considered worse than useless and disbanded. Small wonder then that the doctors were at their wits end in trying to solve the problem. The disease was naturally thought to be transmitted from person to person by contact in some way, but here with the quarantine it was worse than before. What could it be? As with any baffling problem, a great many theories arose—some thought it was a "humeral" disease—others that barometric and thermometric conditions controlled it—and, of course, innumerable others.

After 1824, due to the most disappointing results, the quarantine was given up, and although the fever took its toll in many of the after years, it at least did not occur every year. The population had grown rather passive and almost fatalistic regarding the yellow jack, and most of the older natives had already had the disease and were immune to another attack. However, also during this time, the city was rapidly growing, and the new members of the community who were not immune were hard hit by the epidemics. In 1853 New Orleans had grown to a size of about 150,000. This summer the Yellow Jack struck its hardest blow and there were nearly 8,000 deaths. Citizens and doctors alike were frantic—but helpless. Patients were carefully treated, but with such a high death rate and no means of checking the disease, little hope was offered. Two years later it was decided that they should return to the quarantine. This act seemed only to tease the "Yehudi" of his day, for he struck again that very year, and again in 1858.

To bring your mind back to the setting, New Orleans was still growing rapidly. Her reputation had been established, and people the world over were eager to visit, while many others saw it as a good business location and came to establish their homes. However, despite the glamour and romance of our fair city, New Orleans was dirty—filthy. Dr. Chaillé said regarding the sanitation of the city, "stagnant drainage, foul sewerage, environing swamps, ill and unpaved streets, no sanitary regulations, and filth, endless filth everywhere." These conditions, he said, were true until 1870 (with the exception of 1862 to 1865) when some slight improvements were made.

Then followed the War Between the States, and Admiral Farragut forced New Orleans to surrender in 1862. A new government was established under General Butler, who was so immensely hated that even the prostitutes are said to have pasted his pictures on the bottom of their slop jars. General Butler evidently ruled with an iron hand, and forced people here into a far different sort of life than that to which they were accustomed. However, despite his practices and actions, General Butler did have one redeeming feature, which he evidently passed on to his successors, Generals Banks and Canby. They ruled New Orleans from 1862 to 1866, and during this time it is said that the city was kept in a much cleaner condition that before, and than it was for many years following. And also during this time the city was practically free from epidemics. It must have seemed like the Yankee quarantine worked while the local ones did not. The exact details of the quarantine, and the cleaning up campaign were not given, but it may be assumed that simple general measures were taken. However, although the city itself suffered no epidemics, in 1864 there were 200 cases on board naval vessels in port, and 52 of the patients died. It is brought out that these boats were under strict quar-

antine and were more or less isolated when they were found to be infected.

In the year 1867, when the military rule had left and the quarantine was not enforced, the city suffered another severe epidemic with more than 3,000 deaths. The cause of the fever was still unknown, though it seemed to be fairly definitely established as a contagious disease, and much was written upon the cause and prevention.

In the following years, although there was some yellow fever, it did not occur in the vast epidemic form which was seen in 1853 and in 1867. In fact, the years from 1878 until 1897 were free of epidemics and the population held their breaths and prayed that it had gone to stay. However, they enjoyed no such luck, and in the latter year there was an epidemic with 300 deaths. The yellow jack also visited in 1898 and 1899, although the epidemics were not very severe in comparison to former ones.

In the next year, at the turn of the century, came the "eureka" that had long been waited for, and that was heard all over the world. It is not necessary to repeat the story that you all know so well—how Dr. Carlos Finlay of Havana persuaded Major Walter Reed that yellow fever was carried by the *Aedes aegypti*, or *Stegomyia fasciata* mosquito. And how Dr. Reed, with his immortal assistants, Drs. Lazear, Carroll, and Agramonte, together with volunteers from the United States Army and Spanish immigrants, proved without a doubt that Finlay's theory was correct. You all know of these heroic efforts, and how Lazear died and Carroll barely escaped with his life after voluntarily submitting to the bite of infected mosquitoes. Now the fear of the yellow jack could be reduced—but let us see.

In 1901 Gorgas decided to put Dr. Reed's experimental evidence to the acid test. Havana was the seat of endemic yellow fever and scarcely a day passed without at least one new case having been reported. Therefore, in Havana Dr. Gorgas began his anti-mosquito campaign, the methods of which are well known—screening, drainage, oil on water, and miraculously yellow fever disappeared from Havana. Now it had been proved, both experimentally and practically, how yellow fever was spread and a definite way of checking this had been perfected. At last the tropics and sub-tropics could breathe easier. Of course there was a great deal of work to do but now they could remove this ever present danger—but could they? Yes, they could,—but they would not. Some skeptics and dyed in the wool veterans doubted what had happened. Also it would require a great deal of money to make the necessary improvements for mosquito control. We must remember that still in New Orleans, as late as 1905, the houses were not screened, there were open ditches, open cisterns were used, streets were unpaved, and, in short, it still served to breed the stegomyia as we grow staphylococci on agar in an incubator.

To return to our original setting—New Orleans, summer of 1905. (I might say that although the public announcement of yellow fever was not made until July 12, at that time there were over 100 cases and the doctors knew of its presence.) New Orleans had been free from the fever since 1899, and during that time a great many non-immunes had been added to the population. As Dr. Matas said, "all the elements were now assembled for another outbreak of the plague; human tinder in abundance, myriads of stegomyia mosquitoes to carry the incendiary torch from house to house and from man to man. All that was missing for the explosion was the match to light the first fire."

This match evidently came in the form of a sailor from South America. At any rate, when the public announcement was made on July 12, 20 deaths had occurred.

It must be said that Dr. Quitman Kohnke, who was the health officer of New Orleans had been very interested in Gorgas' work and had followed it closely. For the preceding three years he had begged and entreated for the city to carry on an anti-mosquito campaign, but in the absence of the fever, none had heeded his advice. The people of New Orleans had come to accept yellow fever, and believed it foolish to try and rid

the city of mosquitoes. Gorgas' accomplishments were only of academic interest they said.

But when the yellow jack struck, Dr. Kohnke, aided by the State Board of Health and several other organizations, started their anti-mosquito campaign, and on August 8, the Public Health Service took charge and continued their work. At this time there were already 616 cases of the fever and it could be seen clearly that the invader had secured a foothold. However, Dr. Joseph White, head of the United States Public Health Service here took charge and systematically began to rid the city of mosquitoes. The city was divided into sections, each with a medical officer in command, several medical assistants, inspectors, screeners, fumigators, and tenders of supplies. These men went from house to house and reported cases of fever and also breeding spots for mosquitoes. The amount of work to be done was enormous. Most of the houses depended upon cisterns for their water and all of these cisterns had to be screened and oiled. Stagnant pools must be flushed or oiled and gutters treated in the same way. Houses must be screened, especially those in which yellow fever had hit a member of the household. Where patients with yellow fever could not or would not leave home for the isolation hospital, they were kept under mosquito bars and all rooms in the house were sealed and then fumigated to destroy any mosquito present.

However, with all of these measures, and though they received support and praises from the leading citizens, some people were still reluctant to join the "stop the stegomyia" campaign. It must be said that most of these came around to "see the light" after a little propaganda, and on the whole the citizens showed excellent cooperation. To illustrate this Dr. Bruns told the story, as quoted by Dr. Matas, of the "hard-headed old Irish woman who refused to allow her cistern to be oiled. When finally persuaded by one of the most diplomatic of the foremen, she exclaimed, 'Well, come in and do it if yez is bound to, but I don't belive yez can keep the Lord from getting those He wants by putting a little ile on the cisterns.' " Nevertheless, there were still some who refused to accept these measures and for the benefit of these an ordinance was passed by the city council to make it unlawful for property holders to interfere with the Board of Health's campaign against the mosquito.

At any rate the preventive measures were most successful and after August 12, the number of cases began to decline and the epidemic was stopped completely in November. It must be remembered that all previous epidemics had continued until the first frost, in December. If the number of cases by the 12th of July had paralleled the record of previous epidemics, it is estimated that the toll would have been higher than 30,000 cases with 4,000 deaths.

This victory over the yellow jack was not significant to New Orleans alone, but the entire Southern United States, where this peril was also prevalent. It is said that the first victory over yellow fever was in Havana in 1901, the second and greatest in New Orleans in 1905.

In this brief and sketchy history of yellow fever in New Orleans, the climax has been reached, but the story has not been completed. Although it is true that we have had no yellow fever epidemic since that in 1905, "the human tinder is still in abundance, and the myriads of stegomyia mosquitoes are still ready to carry the incendiary torch." It is true that New Orleans is a much more sanitary spot today than it was in 1905, but there is still plenty room for improvement. The stegomyia is a city mosquito and these little devils are responsible for most of the stings suffered by our fellow townsmen today. And so if the yellow jack did find its way here, there would be plenty of transportation and a great many available residencies for it. Therefore, we must not be caught sleeping at the switch, but must keep on the alert to prevent the disease from ever getting a start. We now know most of the secrets of this yellow peril even though we have never seen him. And with this knowledge comes

also the information necessary for keeping him out.

Thirty-seven years have elapsed since that miraculously bloodless battle of 1905, the victory that delivered us from the thrall of the Yellow Jack. During these years, the peace, health, and prosperity in which we have lived have tended to make us oblivious of the anguish of the past and lulled us into a false sense of security which our present knowledge of yellow fever in connection with the vast expansion of aerial communication and transportation scarcely justifies. Yellow fever is not dead, but is still smouldering, particularly in the jungles of South America. Although epidemics in the larger cities are rare, they do occur, and Rio de Janeiro was hit within the last 15 years. We have now learned that there are two types of yellow fever, both identical in their clinical manifestations, but entirely different in their origin, habitat, and mode of propagation. We still have the classical yellow fever of the tropical, sea bordering countries, transmitted solely by the *Stegomyia,* causing epidemics relatively easy to control by the destruction of this urban, social, domestic, sweet water mosquito; on the other hand, there is the wild, savage, jungle type of yellow fever which flourishes in the wilderness among the wild animals of the forest like an epizootic and is transmitted by not one but by many varieties of mosquitoes which live in trees and challenge all the methods of mosquito extermination that Finlay and Reed devised, and Gorgas and his followers so successfully applied in Havana, New Orleans, and Panama and all the sea ports of the tropics.

In preventing the disease from reaching our cities, our ships are not a great problem due to the quarantine maintained over them and the mosquito control observed on board, but our airplanes may serve as carriers. The health authorities recognize this danger and eliminate it by a thorough spraying of planes from South America and other potential foci. And so we here today may feel safe from this scourge as long as we maintain our vigilance, but let up hope and pray that we will never forget our lesson and open our portals to the Yellow Jack.

It is of current interest to note that members of our armed forces who are stationed in or near potential yellow fever areas are routinely vaccinated against this disease. This is the only specific treatment that has proved of value, and it is to be hoped that this precaution will be 100 per cent effective.

In conclusion, although our fair city bears memorials to Jackson, to Lee, Beauregard, and other military heroes, it would be more than fitting to immortalize the names of those who were responsible for the greatest and most important victory that the city has ever achieved. In the medical library of Louisiana State University is such a memorial to these men—Finlay, Reed, Lazear, Carroll, Agramonte, and Gorgas—they are real heroes of New Orleans, and to them we are deeply indebted for triumphing over our greatest enemy—yellow fever.

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PERSONAL EXPERIENCES AND REFLECTIONS ON YELLOW FEVER*

RUDOLPH MATAS, M. D.
NEW ORLEANS

I thank you, Mr. President, for the compliment of your invitation to speak on yellow fever, the subject of Dr. Landry's interesting essay; a topic so appealing to my personal experience and so enduring in its interest to New Orleans' doctors.

Despite the fact that dissertations on yellow fever have become somewhat threadbare and are regarded largely a matter of history or of purely academic interest by the members of the profession who have

*Read before the Orleans Parish Medical Society, July 13, 1942.

had no personal contact with the great yellow plague,—it is pleasing to us surviving veterans of the great Sanitary Victory of 1905,—to hear memories of a seemingly dead past revived and reviewed by the young of the profession. And it is right that this should be so, if only to remind the present and coming generations of Orleanians of what medical science has done to deliver them from the tyranny of a monstrous pestilence, and, thereby, secure for them the health, the happiness, and the ever growing prosperity that they, our people, are enjoying today.

* * *

If there is one thing that is true, and the only thing that may be good about yellow fever, it is that if you survive one attack, it never bothers you again for the rest of your days. At least, that is the rule, and it is because my personal experience seems to be so contrary to this rule that the story of my dealings with yellow fever may be worth telling.

* * *

New Orleans—1867. First Attack. Speaking of my personal experience, may I say that my interest and personal contact with the yellow plague go as far back as the epidemic which swept over the city in 1867, when I was seven years old. This gave me a claim to the title of "immune", which was indeed an asset of inestimable value to all of its possessors, and particularly to doctors whose usefulness in all yellow fever countries chiefly depended upon this qualification.

The Charity Hospital in 1878—Second Attack. It was confidence in my immunity that made me fearless of the disease when I was an undergraduate intern at the Charity Hospital during the devastating epidemic of 1878. The recollections of that tragic year remain for all time vivid and inextinguishable . Our entire resident staff was laid low and disabled at the outset; my roommate died. For a time, I was alone making rounds in wards crowded with the sick and dying, yet I was, seemingly, impregnable to the infection. Late in September, when the virulence of the epidemic had abated, I was taken suddenly ill and put to bed with a fever that a beloved teacher and great authority (Professor Bemiss) declared was yellow fever. I recovered rapidly with no complications and again won the prized title of "immune", for the second time in eleven years.

Havana in 1879, and the First U. S. Yellow Fever Commission. Third Attack. It was this distinction, I am sure, that made me eligible the following year, 1879, (while still an undergraduate intern at Charity Hospital) to serve in Cuba as clerk and laboratory assistant to the first yellow fever commission sent by the United States to Havana under the chairmanship of our great Dean, Dr. Chaillé, to investigate and report on the sanitary condition of Havana and the Island of Cuba. There, after four weeks of constant contact with fellow fever in the hospitals and morgues of Havana, I was taken suddenly sick with a fever of short duration, which the experts of the commission believed was yellow fever despite my previous two attacks in New Orleans. Whether right or wrong, the diagnosis was made and remained as a distinction of my "immunity", for the third time.

Brownsville, Texas—1882. Fourth Attack. But that is not all, for in 1882, I had barely settled in practice here, at home, when I received an urgent call from the City Council of Brownsville, Texas, to assist the local profession in controlling an epidemic of yellow fever which had spread over both banks of the Rio Grande on the American and Mexican sides of the river. Owing to the great strain of night and day calls for relief, I was tired and exhausted, but otherwise in vigorous health. I regarded myself as absolutely immune to yellow fever, and I was surprised when I was suddenly seized with an acute fever of short duration, with no typical symptoms, which my colleagues, however, quickly diagnosed as yellow fever. As in previous attacks, my recovery was prompt with no residual disability. But the attack, whatever it was, had sufficed to give me the extraordinary title of "immune" for the fourth time in fifteen youthful years.

You may well judge by this experience that I have good reason to claim a close and rather kindly acquaintance with yellow fever, since I have seemingly spared no less than four times from the deadliness of his embrace.

CARLOS FINLAY—HAVANA, 1879

Incidentally, it was in Havana while working in the laboratories of the Yellow Fever Commission that I first met Dr. Carlos Finlay, the immortal scientist, who later discovered the transmission of yellow fever by the mosquito. This was in 1879 and he was already known as an eminent and tireless investigator. He had not yet begun the studies on the mosquitoes of Cuba, which led him to pick out the *Stegomyia* (*Aedes aegypti*) out of eight hundred varieties of mosquitoes, as the specific transmitter of yellow fever. Little did he or I imagine that sixty-two years later (1879-1941) I was to return to Havana and represent the city of New Orleans at a great international celebration in commemoration of the 108th anniversary of his birth,—to bring the homage of New Orleans—one of the first cities in America to benefit by his discovery and one of the last to recognize its debt to his genius.

WILLIAM C. GORGAS—BROWNSVILLE, 1882

I am also glad to recall that it was during the epidemic at Brownsville, Texas, in 1882, that I first met Dr. William Crawford Gorgas, then Lieutenant M. C., U. S. A., who had been assigned to that post immediately after his graduation at the Army Medical School. He had never been in contact with yellow fever, and it was not long after his arrival that he was stricken with a severe attack of the prevailing (yellow) fever. It was during this illness that I called on him as relief physician and assistant to a mutual friend, Dr. Melou, the contract surgeon of the post. As the outcome of this bedside acquaintance, a friendly relation was established which he remembered to the end of his glorious career. There were beautiful traits in his character which gave charm to his personality; but it was yet too early to foresee the path which, twenty years later, was to lead him to the pinnacle of fame as the "conqueror of yellow fever" in Cuba and Panama by his mastery of the principles and practice of sanitation by mosquito eradication.

DIAGNOSTIC RESOURCES OF THE PAST AND PRESENT CONTRASTED

In this connection we become aware of the immense progress accomplished by scientific research since 1905, when we realize that at that time the diagnosis of yellow fever was based almost exclusively on the clinical picture. In all mild, isolated, atypical, and complicated cases, outside of epidemic areas, the diagnosis was speculative, uncertain, and controvertible. It was not until 1927 when it was discovered that the yellow fever poison was a filtrable virus, directly transmissible by inoculation to rhesus monkeys (Stokes et al.), white mice (Theiler, 1930), that a specific diagnostic and practically infallible test of susceptibility and immunity to yellow fever was devised by utilizing the white mouse as a test animal,—the "mouse protection test" of Sawyer and Lloyd. (1933)*

How quickly this relatively simple test would have told whether my four alleged attacks of yellow fever were genuine reinoculations,—*de novo* attacks of the disease, or merely accidental and innocent fevers which had no causative relation to yellow fever.

The conclusive demonstration of a specific and unmistakable histologic lesion of the liver in yellow fever (Hoffman, Havana, 1920-25), which could be readily demonstrated without general autopsy, by extracting a specimen of liver with a special trocar, —viscerotome (Sawyer and Lloyd, 1934) gave a new and immense impulse to the study of the epidemiology of the disease.

By these tests the past or present existence of yellow fever in the living and the dead can be determined not only in indi-

*The opportunity to test the permanent protective value of the blood of a human subject immunized to yellow fever, by a previous attack, is being considered by the author in connection with the "mouse protection test"—the results to be reported later in a supplementary note.

viduals, but in whole populations when exposed to the disease.

When we recall the often bitter wrangles over the clinical differentiation of mild and atypical yellow fever patients, and the unseemly disputes among experts on the true nature of the lesions exposed in the dead house,—how thankful we of the present should be for the heroic and self-sacrificing medical pioneers, who in the experimental laboratories in tropic regions have done so much to give precision and certainty to the unaided senses of the clinician and sanitarian.

AVIATION AND YELLOW FEVER

Dr. Landry has laid stress on the potential danger of future visitations of yellow fever by the aerial transportation of virulent jungle mosquitoes, besides many wild animals (marsupials and rodents) known to be normal virus carriers in the jungle, which could readily contaminate our, at present, virus-free Stegomyia. To his just alarm I would add my own conviction that the danger of importation will be made surely greater by the vast increase in the aerial traffic between New Orleans and the contaminated countries south of us after the war.

VACCINATION: WARNING TO SANITARIANS

On the other hand, it is comforting to know that the progress of science has anticipated the present emergency created by aviation, for we now have provided for our safety a vaccine that is protective against the virus of the disease whether it be urban and social, or savage and of jungle origin. While it is evident that all the exposed populations of the world cannot be vaccinated, it is possible that our armies destined for service abroad, and other civilians most exposed, can be so protected. Meantime, the responsibility for preventing an outburst of yellow fever in New Orleans or on the continent, rests upon the sanitary authorities of the city, state, and nation, who should be as diligent in the destruction of all mosquitoes and other insect vectors of yellow fever and other diseases transportable by aircraft, with as much thoroughness as that applied by their ancestors to the fumigation and disinfection of ships engaged in the trade of tropical seas.

Now, more than ever, eternal vigilance is the price of safety!

DISCUSSION

Dr. Clyde Brooks (New Orleans): I want to speak a word of appreciation and felicitation to the Society on this very interesting paper and unique experience told by our honored fellow, Dr. Matas, who can still speak with so much knowledge and authority of his personal and intimate contacts with Finlay, Gorgas and other conspicuous heroes of these campaigns.

We have a society at L. S. U. called the "Gorgas Medical Society." In that society we call attention to the noted work of Gorgas in connection with yellow fever. Another chapter of this society is in the School of Medicine, University of Alabama. We are enthusiastic about the study of yellow fever and heroes of medicine associated with the conquest of yellow fever.

We are fortunate to know a man like Dr. Matas who has been in this work and has wrestled with the enemy and has conquered.

COMMON DISEASES AND INJURIES OF THE EYE

GEORGE M. HAIK, M. D.*
NEW ORLEANS

There is no branch of specialized medicine that is more closely correlated to the general practice of medicine than ophthalmology. So many diseases of the eye are simply local manifestations of some constitutional disease as tuberculosis, syphilis, gonorrhea, diabetes, arteriosclerosis, renal disease and focal infection.

The primary efforts of any eye physician are directed toward conservation of vision and the prevention of blindness. It can, therefore, be readily seen that the most important factor in the successful treatment of any ocular disease is the early institution of proper therapy. This may be accomplished only by the close cooperation of the general practitioner.

I wish to emphasize some of the ophthalmic problems that are encountered daily by every practitioner, whether he be engaged

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in general practice or some special branch of medicine.

EYE DISEASES OF THE NEWBORN

(a) *Inflammatory diseases*: Acute conjunctivitis may be chemical, catarrhal or gonorrheal in origin. In the treatment of chemical conjunctivitis one should be careful not to employ too strenuous measures. Argyrol may lengthen the course of the disease by causing the lids to stick together, thus damming up the secretion. Used over a long period of time it may produce argyrosis. Gonorrheal conjunctivitis, however, calls for prompt and energetic treatment and the best possible nursing care, as many of these eyes sustain serious and permanent damage. Frequent irrigation is imperative. Dacryocystitis is seen fairly commonly in babies. It is sometimes mistakenly diagnosed as conjunctivitis. Pressure over the lacrimal sac causing pus to exude from the punctum establishes the diagnosis. There is also the characteristic watery eye and the so-called lacrimal conjunctivitis.

(b) *Injuries occurring during delivery:* Obstetricians should be particularly careful to prevent direct injury to the child's eyes in application of instruments during delivery of what may appear to be a minor external injury to the lid or a subconjunctival hemorrhage may cause irreparable damage to the eye. Pressure on the skull in difficult extractions or badly applied forceps may produce injury to the occipital cortex and base of the brain with hemorrhage and concussion, causing total blindness or damage to the ocular nerves. Injury to the base of the brain produces ptosis, squint, and other conditions. Ptosis also occurs in spontaneous deliveries.

CONGENITAL AND HEREDITARY ANOMALIES

This group of cases is responsible for many instances of blindness and presents a difficult problem to the physician and oculist. It includes congenital cataract, squint, dislocated lens, albinism, retinitis pigmentosa and interstitial keratitis, choroiditis and optic atrophy due to congenital syphilis. While many of these may not be cured, some of them are at least amenable to treatment to the extent that the pathologic processes may be retarded. Cervical sympathectomy has been effective in some cases of early retinitis pigmentosa, not as a curative agent, but as a means of conserving the remaining vision. Proper antisyphilitic treatment of the mother during pregnancy cannot be overemphasized as an effective measure in preventing eye diseases due to congenital syphilis.

EYE CONDITIONS OF EARLY CHILDHOOD

(a) *Eyestrain:* The indifference with which eyestrain is considered is difficult to understand. The relief of eyestrain and the prescription of glasses is all too often treated as a matter of routine, when in reality, it is a medical problem. Aside from the errors of refraction, it should be interpreted as an impairment of function, frequently of important diagnostic value. This condition may be manifested by headache, nervousness, irritability, blurring of vision, blinking, itching and difficulty in getting along in school.

(b) *Squint:* The family physician or pediatrician is usually the first to observe the cross-eyed child. It is to be regretted that even today some practitioners believe that children outgrow this deformity and advise watchful waiting, stating that the child is too young to wear glasses. The possibility that the child will outgrow the defect is so slight that it should never be considered, because the percentage that correct themselves is so small. No child is too young to receive some form of treatment. Furthermore, if care is not instituted early the sight in the squinting eye may be partially or even completely lost. Most children with crossed eyes can be cured by glasses, muscle training, operation or a combination of these methods, if they are placed in the proper hands at an early date. Successful treatment of squint does not mean simply that the appearance of the patient has been improved, but vision in both eyes is good. Aside from the visual handicap, it is certainly an injustice to the child with strabismus to allow him to grow up among his friends and suffer the psy-

chologic effect of such a noticeable cosmetic defect.

(c) *Congenital cataract:* Another problem caused by procrastination on the part of the parent or medical adviser is the case of congenital cataract of sufficient size appreciably to reduce vision. The belief, though erroneous, still holds in some circles, that congenital cataract should not be removed until the child is six or eight years of age. On the contrary, if these congenital cataracts are not removed early enough the development of vision is retarded and permanently reduced. It is a substantial fact that up to four years the chances of developing normal visual acuity are good, from four to seven they rapidly decrease and after nine years of age they are most doubtful.

EYE MANIFESTATIONS OF CONSTITUTIONAL DISEASE AND FOCAL INFECTION

There are few systemic diseases or focal infections, which if present for any length of time, do not produce some ocular change.

There are those changes which may be the result of absorption of large amounts of chemical toxins, such as alcohol, tobacco, arsenic, lead, quinine and dinitrophenol. Some produce neuritis and swelling of the optic nerve. Dinitrophenol, which has been widely used as a reducing agent, produces cataract.

Most physicians are familiar, I am sure, with the loss of vision which sometimes accompanies the toxemias of pregnancy, uremia and diabetes. These are believed to be toxic and metabolic in origin.

Diseases of the teeth, tonsils, sinuses, gastrointestinal tract and genito-urinary tract are sources of eye disease. It is believed that the most frequent route of transmission is through the blood stream (Dutrey).

Vitamin deficiencies, particularly A, C, D, B_1 and B_2 are believed to be responsible for some structural and functional changes in the eye. These may be retrobulbar neuritis or cataract.

Retinal hemorrhage is the most common manifestation of vascular disease. It may occur in the anemias, high blood pressure, arteriosclerosis, renal disease and heart disease.

INJURIES

Trauma to the eye is frequently associated with trauma to other parts of the body and the physician caring for the other injuries is usually the first to see the patient. Unless injuries to the eye are promptly and properly cared for a minor injury may result in a bad looking scar or loss of eyesight.

Contusions usually respond satisfactorily to compresses. Penetrating wounds are commonly caused by flying particles of steel, cement, glass or wood. Such injuries require immediate attention and the first treatment may be the deciding factor between eyesight and blindness. Not infrequently these foreign bodies lodge in the cornea, producing abrasion of the corneal epithelium and open up the way for bacterial infection. Patients with injuries such as lacerations of the lids and intraocular foreign bodies should be hospitalized immediately. The repair of eye injuries requires skill and patience. Often, careless and hurried suturing necessitates plastic surgery later on and this is never as effective as a proper primary repair.

Antitetanic serum should be administered, free drainage maintained, the wound kept clean and the patient kept at complete rest. On this regime patients with eye injuries recover in a shorter time with less scarring and better visual results.

Burns: It is believed that a large percentage of visual loss might be prevented by the proper treatment of acid and alkali burns.

Whenever the burn is due to acids or chemicals the best first aid treatment is to lay the individual on his back and thoroughly irrigate the eye, lifting the lids and enabling the water thoroughly to irrigate the eyeball. If nothing else is possible the head can be put in a pail of water and the eyes opened and rotated so as thoroughly to cleanse them of acid. The neutralizing agents to use in alkali burns are zinc sul-

phate and dilute acetic acid. Zinc sulphate is readly obtainable at any drugstore. It acts with sodium hydroxide producing sodium sulphate and zinc hydroxide. Proper and quick neutralization is the essential treatment and by quick neutralization is meant that received a few seconds after the caustic has entered the eye.

For acids the same measures are stressed, using as a neutralizing agent sodium bicarbonate. This should be followed with pontocaine and olive oil.

Because of the severe pain involved, the use of pontocaine or some other local anesthetic should be immediately used, and following cleansing and neutralization olive oil is instilled into the eye and cold compresses applied.

One fact should be emphasized, that all injuries, regardless of the type, should be treated primarily for the retention of vision and prevention of infection.

CONDITIONS OCCURRING MOST FREQUENTLY IN MIDDLE LIFE AND LATER

(a) *Presbyopia*: This is not a disease but a physiologic process occurring in most individuals forty years of age and older. It is thought to be due to a disturbance of nutrition in the tissues of the eye just as occurs in other parts of the body in individuals who have reached middle age. Such individuals may continue full activity with properly fitted glasses.

(b) *Glaucoma:* This may cause almost complete blindness without any pain or redness of the eye, the only complaint being disturbance of vision. The importance of early recognition of glaucoma cannot be over emphasized, as it is responsible for far too much of our present blindness.

Atropine is frequently used in these cases with inflammatory reaction or in injuries of the eye. It is often the precipitating factor in the production of glaucoma, if not already present. If there is the smallest doubt in your mind as to whether atropine should or should not be used, homatropine may be substituted with safety because its effect may be controlled while that of atropine cannot be controlled.

(c) *Cataracts:* Many erroneous impressions are conveyed concerning cataract. They not only impair vision but cause blindness. Many individuals have cataracts which are sudden in onset. The belief that these cannot be removed until they are so to speak "mature" is an old idea and not in keeping with the present day thought. Cataracts may be removed during any stage of their development. I prefer to do this when an individual cannot carry on full activity. There is, however, a type of cataract which develops so slowly that the visual acuity is never impaired to the extent that operation is necessary.

SUMMARY

Every individual with cataract should have the benefit of a complete medical study in order to determine the cause and best plan for treatment. Here again, we must be on the lookout for glaucoma so frequently seen in hypermature cataract.

GLOMERULONEPHRITIS*

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More than a hundred years ago Richard Bright expressed humiliation that a cure for nephritis had not been found. Today Bright's confession must be repeated. Not only has no cure for the disease been discovered, but its pathogenesis is still uncertain, and the genesis of all its symptoms is not entirely clear.

ETIOLOGY AND PATHOGENESIS

The fact that bacterial toxins, particularly toxins of hemolytic streptococci, are concerned in the causation of glomerulonephritis is well established, but the mechanism by which the toxins induce nephritis is uncertain. The latent period between the height of bacterial infection and the appearance of nephritis precludes the possibility that the toxins seriously injure the kidney directly. It has been hypothecated that

*Read before the Orleans Parish Medical Society, December 14, 1942.

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nephritis is due to the development of hypersensitiveness of kidney tissue to bacterial toxins which are in intimate contact with renal tissue during the process of their removal from the body, or that in some way the development of nephritis is tied up to antibody formation. Recently Schwentker and Comploier[1] have presented a reasonable concept of an antigen-antibody mechanism as the cause of glomerulonephritis, which is supported by certain experimental and clinical observations. Bacterial toxins produce slight kidney damage, resulting in the entrance into the blood stream of substances derived from the injured renal cells. These substances act as antigens, and cause the development of specific antibodies which are destructive to kidney tissue. Progressive nephritis from a single infection could be produced by this mechanism, and exacerbations of nephritis would be expected to follow recurrent infections.

SYMPTOMS AND COURSE

The genesis of most of the symptoms of nephritis is moderately well understood. The urinary abnormalities are due to increased permeability or to rupture of glomerular capillaries.

The other prominent symptoms, any one of which may be absent, are edema, hypertension, convulsions, and in cases of progressive disease, evidence of impaired renal function, renal insufficiency, and uremia. The edema of acute nephritis has been considered to be due to increase of the permeability of systemic capillaries to protein, allowing escape of serum protein into tissue spaces, increasing the protein content and hence the osmotic pressure of the interstitial fluid. Recent studies by Warren[2] in which the protein content of edema fluid from the patients with acute nephritis was found not to be increased, casts doubt upon the operation of this mechanism. It seems likely that one factor in the genesis of edema in acute nephritis is salt retention which results merely from diminution in the output of water by the kidneys.

It is quite definitely established that much of the edema in acute nephritis is due to heart failure. Most patients with severe nephritis have cardiac enlargement, gallop rhythm, and markedly increased venous pressure. Heart failure results from acute hypertension and perhaps also from acute toxic damage to the myocardium. Edema due to heart failure also occurs in chronic cases which have had hypertension for a long time.

A third factor, depletion of the plasma proteins resulting from albuminuria, also operates in the production of edema in the cases which are classified as subacute. This factor produces what is called the nephrotic stage. Thus the edema of nephritis may be due to salt retention resulting from oliguria, to heart failure, or to prolonged albuminuria. All these factors may operate in the same patient at the same time or at different times.

Hypertension is attributed to diminished blood flow through the engorged kidneys. Convulsions are related pathogenetically to the hypertension, although their exact genesis is not clear. They are not due to uremia, which is uncommon in acute nephritis, and are probably not due to edema of the brain. Uremia, which is the terminal event in most cases of chronic nephritis, is due to progressive destruction of kidney parenchyma.

THE ROLE OF SALT IN EDEMA

The total amount of water in the interstitial spaces is dependent upon the total amount of sodium in the body, practically all of which is in the tissue spaces. Retention or administration of salt, therefore, tends to cause edema, while the interdiction of salt tends to cause dehydration, irrespective of the amount of water which is supplied. The last statement applies even though no urine at all is being secreted. In such a circumstance sodium is gradually lost by other routes, and dehydration results even though large amounts of water are given. The tenacity of the animal organism in maintaining a constant concentration of sodium in the tissue fluid is a fundamental factor which must be considered in the treatment of all diseases in which edema or dehydration is apt to occur.

PREVENTION

Much nephritis might be prevented if streptococcal infections, particularly infections of the throat, could be promptly controlled. Although there is no good evidence that the course of ordinary streptococcic tonsillitis is shortened by sulfonamide therapy, it is certain that such therapy diminishes sharply the number of colonies which may be obtained by throat culture. The use of sulfanilamide in moderate dosage would therefore seem to be indicated, not only to prevent nephritis but also the other complications of tonsillitis, such as middle ear disease and rheumatic fever. Tonsillectomy, perhaps preceded by a short period of therapy with sulfanilamide, is also indicated for persons who have had repeated attacks of acute tonsillitis.

TREATMENT

It is not unreasonable to suppose that the use of sulfanilamide, by reducing the numbers of streptococci which are harbored in the throat, might be beneficial during the course of acute nephritis. A recent report by Williams, Longcope, and Janeway[3] suggests that the acute phase may be shortened and progressive disease sometimes prevented by the use of sulfanilamide in moderate dosage. These authors also recommend tonsillectomy, preceded and followed by treatment with sulfanilamide after the acute manifestations have disappeared. Sulfanilamide rather than any of its derivatives is used because of the almost complete absence of kidney damage due to sulfanilamide itself.

Otherwise the treatment of nephritis consists of measures to prevent and to control symptoms. Edema may be minimized by salt restriction; salt should be completely interdicted if marked edema is present. Fluid restriction is unnecessary, but there is no reason for the forcing of large amounts of fluid. Heart failure is to be handled by conventional measures. The value of blood letting in acute failure with dyspnea is not to be forgotten. Some of these patients have large amounts of edema fluid in the pleural cavities, which increase dyspnea by causing compression of the lungs; such large effusions should be removed.

Convulsions may be prevented by the use of sedatives in patients with very high blood pressure, and particularly if restlessness, headache, or muscular twitchings occur. Magnesium sulphate is popular for this purpose, but it is unlikely that its effect is superior to that of the barbiturates.

Depleted plasma proteins in the subacute or nephrotic stage cannot be restored permanently by any means now available. Theoretically diets high in protein should help, but actually they do not cause appreciable change in the levels of the serum proteins. Transient elevation of the proteins and sharp diuresis may be produced by the intravenous injection of large amounts of concentrated blood plasma. The temporary effect of such injection limits its usefulness to cases with marked edema which persists in spite of drastic salt restriction.

As has been indicated, the only effective method of preventing renal insufficiency in the presence of marked impairment of kidney function is to increase the intake of fluid, and thus the output of urine. The damaged kidney compensates for diminution of its concentrating ability by the secretion of a larger amount of dilute urine; ample water must be supplied, lest the amount of urine fall below that needed to remove from the body adequate quantities of urinary constituents. It is not uncommon for persons with damaged kidneys to develop uremia because they are not getting enough water; conversely, in some persons uremic symptoms will clear up when sufficient water is given to increase the output of urine. It should also be remembered that patients with chronic glomerulonephritis also have hypertensive heart disease, and that the onset of cardiac insufficiency may precipitate uremia. In such cases digitalization may cause disappearance of the uremic manifestations. Some persons who have burned out chronic glomerulonephritis with marked impairment of kidney function

will live for years if close attention is given to the status of their circulation and if they take adequate fluid.

SUMMARY

Glomerulonephritis is probably due to an indirect effect of bacterial toxins upon the kidneys, by a mechanism which is not entirely clear. Its principal manifestations are:

1. The presence of abnormal constituents in the urine, chiefly albumin and erythrocytes.

2. Edema, which may be due to salt retention, to depletion of plasma proteins, or to heart failure.

3. Hypertension.

4. Impairment of renal function, which eventually leads to uremia in chronic progressive cases.

It may possibly be prevented by proper chemotherapy of acute infections and by the removal of chronic or recurrent foci of infection.

There is evidence that the use of sulfanilamide may be beneficial in the early, acute stages. Treatment otherwise consists of measures to minimize edema formation, to prevent convulsions, to relieve cardiac failure, and to attempt to postpone the onset of renal insufficiency.

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DISCUSSION

Dr. John S. LaDue (New Orleans): I would like to ask Dr. Hull a question about the controversy of doing tonsillectomy while there is any evidence of active disease of the glomeruli, if only to have it clarified in my own mind. It has been frequently stated that this procedure is contraindicated in the presence of active acute glomerulonephritis, and it has been further shown by many investigators that certain patients may continue to exhibit signs of activity for many months: namely, hematuria. Such patients are said to have latent glomerulonephritis, and even though they have chronic tonsillitis I wonder if Dr. Hull would advise tonsillectomy while they still had a significant microscopic hematuria, since such a procedure might be associated with the possibility of reactivating the disease.

Dr. Hull brought out the relationship of congestive heart failure to edema formation in acute glomerulonephritis, and I would like to ask him if he has ever found digitalis helpful in treating congestive heart failure associated with acute glomerulonephritis.

Dr. Edgar Hull (In closing): So far as I know, there is no statistical evidence of the value of tonsillectomy in cases of glomerulonephritis. However, in view of the close association between streptococcal infections of the throat and glomerulonephritis, it seems reasonable to advise tonsillectomy provided evidence of activity persists after an acute attack. It hardly seems necessary to perform tonsillectomy if all evidences of nephritis disappear within a month or two after an acute attack. The danger of acute flare-up might be minimized if tonsillectomy is preceded and followed by the administration of sulfanilamide. Certainly tonsillectomy should not be performed during an actual attack of acute nephritis.

My impression regarding the effect of digitalis in heart failure due to acute nephritis is that its effect is not as dramatic as that in heart failure due to chronic disease of the heart. I advise its use, nevertheless.

NON-PANCREATIC GLYCOSURA*

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INTRODUCTION

Glucose is one of the high threshold substances, being reabsorbed from the proximal portion of the convoluted tubules of the kidneys in relatively large amounts. Ordinarily, glucose does not appear in the urine, or only in microscopic amounts, but when the renal threshold of this substance is exceeded in the bloodstream it begins to "spill over" into the urine.

There are conceivably two factors which may be responsible for glycosuria: (1) lowering of the normal renal threshold, or (2) elevation of the blood sugar level above the normal renal threshold.

The most common condition responsible for glycosuria is diabetes mellitus resulting from hypofunctioning pancreatic islet tissue. However, not infrequently, glycosuria

*Prize thesis submitted to the Department of Medicine of Tulane University.

is encountered in which the pancreas is not primarily at fault. The accurate diagnosis and differentiation of these conditions from diabetes mellitus is essential from the standpoint of treatment and prognosis. As will be brought out later, many of these patients enjoy normal health without following corrective measures, while in others the administration of insulin is actually dangerous.

The purpose of this paper is to present some of the common conditions in which glycosuria is frequently found without primary involvement of the pancreas. The scope of this discussion does not permit an exhaustive presentation of the theoretical and experimental data pertaining to the basis of all non-pancreatic glycosurias, but rather to mention some of the important work and accepted mechanisms explaining the appearance of gross sugar in the urine.

INCIDENCE

In a series of 14,000 cases of glycosuria reported by Marble, Joslin, Dublin and Marks,[1] 2,065 (14.8 per cent) were of other than pancreatic origin. Of this number they were able to trace 1,946 cases. In regard to sex, slightly more males (58.7 per cent) were involved than females (41.3 per cent).

CLASSIFICATION

In order to discuss the various causes of glycosuria some effort should be made toward a classification. That of Joslin et al.[2] is the simplest and most adequate I have been able to find and will be followed in this paper:

Glycosuria

- I. Diabetes mellitus.
- II. Potential diabetes.
- III. Renal glycosuria.
  - A. Glycosuria of pregnancy.
- IV. Unclassified glycosuria.
  - A. Glycosuria accompanying activity of glands of internal secretion other than the pancreas.
    1. Hyperthyroidism.
    2. Hyperpituitarism.
    3. In conditions in which the adrenal glands are stimulated.
  - B. Glycosuria due to stimulation of the intracranial nerves and centers.
    1. Piqure diabetique of Claude Bernard.
    2. Brain tumors.
    3. Cerebral hemorrhage.
    4. Injuries of the skull.
  - C. Alimentary glycosuria.
    1. Glycoresis.
    2. Alimentary glycosuria.
    3. Hunger glycosuria.
  - D. Glycosuria accompanying infections and toxemias.
  - E. Glycosuria in chronic and degenerative conditions.
    1. Vascular hypertension.
    2. Chronic nephritis and nephrosis.
    3. Chronic hepatic disease as cirrhosis of the liver.
    4. Malignant disease.
  - F. Glycosuria due to chemical agents.
    1. Phloridzin.
    2. Poisoning as by uranium, curare, carbon monoxide, caffeine, diuretin, morphine, strychnine, chromic salts, bichloride of mercury, and chloroform.
    3. Anesthesia and asphyxia.
  - G. Mellituria other than glycosuria.
    1. Pentosuria.
    2. Lactosuria.
    3. Galactosuria.
    4. Levulosuria.
    5. Sucrosuria.

DISCUSSION

I. Since this paper deals only with non-pancreatic glycosuria, diabetes mellitus will not be considered.

II. Potential Diabetes: The diagnosis of potential diabetes is made by Joslin[2] in those individuals with glycosuria closely related to diet who become sugar-free with close restrictions, and whose blood sugar is

below 0.13 per cent fasting and never reaches 0.17 per cent after a meal.

Of the 1,946 cases of non-pancreatic glycosuria followed by Marble,[1] 193 (9.9 per cent of the total) developed true diabetes. According to the findings of these authors, the factors that seemed to favor the development of diabetes in those individuals were, in order of frequency, advancing age, overweight, blood sugar value above the average normal at the first observation (though below a definitely diabetic level), and in the younger patients a family history of diabetes. The subsequent incidence of diabetes was much greater among Jews, and was found particularly high among females.

Of 310 deaths occurring in this series, 262 were patients whose glycosuria remained benign. There was no death from diabetic coma.

Short[3] reported a group of 171 cases of non-pancreatic glycosuria which he examined five years after the diagnosis was made. Of these, 90 per cent were males and 10 per cent females. At the end of five years 74 per cent (127 cases) were sugar-free, 26 per cent still had glycosuria, but none had developed diabetes.

III. Renal Glycosuria: The diagnosis of renal glycosuria in a large majority of cases reported in the literature is made in accordance with the following criteria formulated by Joslin[2]: "Conditions in which the renal threshold is very low, as indicated by the fact that all specimens of urine examined, including those after an overnight fast, contain sugar." He further states that the condition differs from true diabetes in that glycosuria is always present, blood sugar is normal, insulin has little or no effect on the urinary output of sugar, the rate of utilization of carbohydrate is normal, ketosis develops during starvation rather than following dietary excesses, diabetic symptoms, including polyuria, are absent and the condition, without treatment, is not progressive.

In experiments to determine the average renal threshold of normal persons, Campbell, Osgood and Haskins[4] found a great variation in the levels at which glucose began to be excreted in the urine. The range in the 24 subjects studied was from 99 to 228 mg. per cent. In 80 per cent of the cases the renal threshold was 140 to 190 mg. per cent. From this work it is seen that if a normal value is given it must allow for wide variation.

Thomas and Southworth[5] call attention to the importance of water balance as a factor influencing the amount of sugar that appears in the urine in any 24 hour period. On the other hand, their work shows that alterations in the water balance have no effect on the total amount of sugar excreted over a long period of time. Sudden increase in fluid intake has been shown to "wash out" large amounts of sugar and during periods of starvation, as after surgical operations, this leads to acidosis.

Closely related to this is the glycosuria occurring following glucose infusions, though it may also be considered a type of alimentary or "starvation" glycosuria.[6] This will be considered in more detail under alimentary glycosuria.

ETIOLOGY

From an etiologic point of view, renal glycosuria is thought to result from a lowering of the renal threshold so that it is reached before all the glucose is reabsorbed from the glomerular filtrate in the proximal convoluted tubules.[7] There has been some question as to whether or not this is due to renal damage. The recent work of Friedman, Selzer, Sugarmann and Sokolow[8] yielded valuable data in answer to this question. These investigators carried out experiments on renal blood flow, glomerular filtration rate and degree of tubular reabsorption in normal and glycosuric subjects, which showed that the glomerular filtration rate and renal blood flow are normal in glycosuric individuals. They also showed that, while the degree of tubular reabsorption is somewhat decreased when the plasma level is between 100 and 200 mg. per cent, the efficiency of tubular reabsorption is equal to or exceeds that of

nonglycosuric individuals when the plasma level is above 200 mg. per cent. These findings show conclusively that renal glycosuria is not due to any organic kidney defect, but rather is due to some mechanism of lowered tubular reabsorption at average blood sugar levels.

HEREDITY

Babson[7] reported investigations of an American family in which renal glycosuria was transmitted through three generations as a dominant character. Similar familial cases are mentioned by Joslin.[2] Babson believed that the presence of renal glycosuria in a given family increased the chances of superimposed diabetes, both in the members with renal glycosuria and those without it.

SYMPTOMS

According to MacPherson,[9] symptoms of hypoglycemia occur in some cases of renal glycosuria and may be of two types: (1) minor feelings of faintness and weakness, due to a low fasting blood-sugar level, or (2) more severe attacks due to hyperinsulinism following rapid loss of sugar in the urine.

He described a case in which the severe attacks were caused by a poor appetite, hard work, and long intervals between meals. In the absence of these factors the symptoms disappeared.

TREATMENT

A large number of patients with renal glycosuria are perfectly comfortable without any particular treatment. However, it is wise for these individuals to avoid sugar, pastry, and dietary excesses and to maintain themselves on a wholesome, well-balanced diet. Their urine should be examined and the blood-sugar level determined one hour after meals at intervals of three to six months.[2]

A. Glycosuria of Pregnancy: Richardson and Ritter[10] reported 247 consecutive cases of women who presented themselves for prenatal care in whom a glucose tolerance test was run. Of these, 20 per cent showed gross sugar in the urine following the administration of 1.75 gm. of glucose per kilogram of body weight. Eight per cent showed a blood-sugar curve on which a diagnosis of lowered glucose tolerance would usually be made, but no definite variation was found in different periods of pregnancy.

In a review by Liston and Chisholm[11] it was concluded that 20 to 30 per cent of pregnant women on ordinary diet excreted sugar in the urine at some time during their pregnancy, more often in the latter half. They stated that this glycosuria is due to a lowered renal threshold to a great extent but that almost always it is associated with a diminishing power to assimilate carbohydrate and store it in the tissues as glycogen.

Allen,[12] in a study of 25 non-diabetic pregnant women, presented evidence suggestive of pituitary involvement as the basis of glycosuria occurring during pregnancy.

At the present time many questions remain unanswered as to the causes of glycosuria of pregnancy.[11]

These patients should practice the same precautionary measures given for renal glycosuria with careful blood-sugar and urine determinations at fairly frequent intervals.

IV. Unclassified Glycosuria.

A. Glycosuria accompanying activity of the glands of internal secretion other than the pancreas.

1. Hyperthyroidism: In a large series of cases of hyperthyroidism studied by Joslin and Lahey,[13] glycosuria was found in 38.6 per cent of primary and in 27.7 per cent of secondary hyperactivity of the gland. They cited work which showed that hyperactivity of the thyroid or administration of thyroid extract increased the sensitivity of the liver for the discharge of its glycogen, as a result of some stimulation which favors the conversion of glycogen into sugar. It was found that the thyroid and pancreas are definitely antagonistic in their action as regards carbohydrate metabolism and thyroid decreases the efficiency of insulin. They also showed that the action of the thyroid was more powerful than

that of insulin so long as there was an available supply of liver glycogen. However, when the stores of glycogen in the liver are depleted the organism becomes more sensitive to administration of insulin, even if administered with thyroid substance.

Wilder[14] summarizes the action of the thyroid as follows: The carbohydrate metabolism is influenced in two ways: (1) By an andrenergic-like action which interferes with the storage of glycogen or releases glycogen previously stored by the liver; and (2) by an antagonism to the action of insulin. He states that insulin secretion is not suppressed in hyperthyroidism but even in the presence of adequate supplies, stabilization of hepatic glycogen is impossible in the face of the hyperirritable sympathetic nervous system.

2. Hyperpituitarism: In a review of the literature to 1927, Colwell[15] cites a number of reported series of acromegaly and pituitary tumors in which glycosuria was a prominent finding. From his discussion it is evident that a great deal of confusion existed and little was known concerning the role of the hypophysis in carbohydrate metabolism.

In a study of 20 cases of basophilic adenoma of pituitary by Long,[16] 14 were found to have glycosuria. He explains the maintenance of normal metabolism as the result of an equilibrium between the liver-endocrine organs-tissues, all exerting their effect by the influence of each on the other. Thus, hyperactivity of the pituitary produces a rise in blood sugar only in the presence of the liver. He presents evidence suggesting a possible relationship between the glycosuria and hyperactivity of the adrenal cortex, resulting from increased function of the pituitary. He states, however, that adrenal cortical hyperplasia is not invariably present in these conditions so the direct association is not definitely established.

The work of Houssay[17] has contributed greatly to the present knowledge of the role of the pituitary in carbohydrate metabolism. He arrived at the conclusion that the posterior pituitary extract causes an elevation of blood sugar through its action on the liver with the participation of the normal adrenal secretion. It counteracts the toxic and hypoglycemic action of insulin.

According to Houssay, the anterior pituitary extract possesses three actions: (1) Through its pancreatotropic action it increases the secretion of insulin and produces a hypoglycemia; (2) its sympathico-adrenal produces an immediate and transsient hyperglycemia; and (3) its glycogenolytic action decreases the liver glycogen.

Best and Taylor[18] state that the diabetogenic substance or substances of the anterior pituitary act in a large part by stimulating gluconeogenesis in the liver. There is also evidence that insulin secretion may be diminished by its injection.

It can only be said that the action of the pituitary gland in carbohydrate metabolism is a very complex one and its role at the present time is still not clearly understood.

3. Conditions in which the adrenal gland is stimulated: It is well-known that fear, emotional upsets, anxiety, and excitement reflexly produce increased secretion of adrenalin.

Green and Emery[19] examined 244 urine specimens of medical and dental students following a final examination in physiology and found gross sugar in the urine in 9.4 per cent. Similar findings have been reported by other authors,[2, 14]

The adrenals play an important role in carbohydrate metabolism. Their action is clearly summarized by Best and Taylor.[18] The secretion of the medulla causes an immediate rise in the blood sugar by the breakdown of liver glycogen to glucose. It also mobilizes muscle glycogen but the immediate product in this instance is lactic acid. However, part of the lactic acid is carried by the blood to the liver where it is reconverted to glycogen, which in turn furnishes the blood with glucose. Thus, epinephrine, while not a chemical antagonist to insulin, has an opposing physiologic action.

The action of the adrenal cortical hormone in this regard is not entirely known, but it has been shown to promote storage of liver glycogen. As mentioned before, the similarity in the actions of the adrenal cortical hormone and the anterior pituitary extract suggests that the effects of cortin are related to the adrenotropic effects of the anterior pituitary.

B. Glycosuria Due to Stimulation of the Intracranial Nerves: For some time it has been noticed that glycosuria occurs in cases of cerebral hemorrhage and thrombosis.

Blake[20] reports a series of 70 cases of coronary occlusion in 20 per cent of which there was a transitory glycosuria and hyperglycemia. He stresses the importance of making an accurate diagnosis because of the danger of administration of insulin to these patients. In all the cases studied the blood sugar had returned to normal with the disappearance of urinary sugar by the end of convalescence.

Raab and Rabinowitz[21] reported that 71 per cent of 21 patients studied with coronary thrombosis showed abnormal sugar tolerance curves. Twelve patients investigated within two weeks of their closure all showed abnormal glucose tolerance. These authors believe that the important factor producing these findings is disturbance of the centers in the brain, due to edema resulting from the coronary occlusion. They state that experiments performed on dogs, ligating the coronaries, have resulted in edema of the medulla and pons with the subsequent production of hyperglycemia and glycosuria.

According to Munch-Peterson[22] there are centers for sugar regulation in the hypothalamus, medulla, corpus striatum and cerebellum, which, when disturbed by injury cause a hyperglycemia. He also expresses the opinion that some cases of glycosuria occurring in cerebral injury are due to diminished power of tubular reabsorption resulting from malfunction of the pituitary, since this organ is so closely related to certain portions of the brain. The possibilities of cerebral glycosuria are summarized by this author as follows: "(1) Through a dysregulation in the rise of blood-sugar after the reception of carbohydrate, the result being an alimentary hyperglycemia, on account of which the renal threshold is exceeded; (2) the threshold falls, i. e., the reabsorption of sugar in the tubules is reduced. In either case the urine will contain sugar.

"There are three mechanisms through which glycosuria may result due to the last form: (a) Direct nervous influence upon the parenchyma of the kidneys; (b) indirect influence through the vasomotor nerves, probably through glomerular action; and (c) centrally regulated, hormonal influence upon the kidneys."

Sachs and MacDonald[23] believe that the glycosuria following injury at the base of the brain is due to disturbance of carbohydrate metabolism under the control of certain centers. They reported a series of experiments on dogs in which the pituitary had been removed and the hypothalamus injured which resulted in a hypoglycemia with no glycosuria. When the same procedure was repeated, leaving the hypophysis undisturbed, there was a decrease in the blood sugar level and glycosuria. Thus, it would appear that the regulation of sugar metabolism is through the pituitary which is influenced by the hypothalamus via nerve pathways.

C. Alimentary Glycosuria: The normal individual has a high tolerance for glucose and large amounts may be ingested without sugar appearing in the urine. The factors which determine the sugar tolerance are rapidity of absorption, extent of utilization and storage by the tissues, and the rate of discharge from the liver.[18] When excessive amounts of carbohydrates are consumed in some cases, the renal threshold is rapidly exceeded and sugar appears in the urine until the blood level again drops to normal. This type of glycosuria is found only following heavy meals or ingestion of large amounts of carbohydrates and gradually disappears.

Occasionally, following glucose infusions, sugar may be found in the urine, even though the renal threshold may not be ex-

ceeded and in many cases not even approached. Cutting[6] explains this on the basis of "hunger diabetes." Many instances are seen in surgical patients who have been in various degrees of starvation.

It has been found[18] that utilization of carbohydrate is at a maximum in animals which have been fed diets rich in these substances. On the other hand, there is definite impairment of glucose utilization after periods of fasting. This suggests that insulin liberation is depressed in starvation. The glycosuria resulting from glucose infusion is due to administration at faster rates that can be utilized by the body.

D. Glycosuria Accompanying Infections and Toxemia: In a large group of patients with infectious diseases, Williams and Dick[24] showed that 41 per cent had glycosuria when given sufficient dextrose. This was accompanied by an elevated fasting blood-sugar level and by alterations in the glucose tolerance curves. The largest average amount of dextrose was excreted by the patients with influenza and miscellaneous acute infections.

They showed that administration of insulin improves the dextrose tolerance and suggested the cause of the hyperglycemia, diminished glucose tolerance and glycosuria was injury to the islet tissue of the pancreas by circulating toxins.

On the other hand, Joslin[2] states that insulin efficiency is definitely lowered in acute infections as shown by laboratory investigations

It is interesting to note that Strain[25] reports a case of staphylococcus and streptococcus septicemia in which a copper reducing substance was excreted by the kidney constantly during sulfathiazole therapy, although the blood sugar level was only 73 mg. per cent. This reducing reaction cleared up promptly upon cessation of the drugs. Strain suggested that sulfathiazole either lowered the renal threshold for sugar or some copper reducing substance was excreted under its administration.

E. Glycosuria in Chronic and Degenerative Conditions: In addition to the conditions already discussed, glycosuria is often found in other chronic and degenerative diseases, such as nephritis, nephrosis, liver disease, hypertension, and malignancy.

In a study of 30 hypertensive, obese females, Musser and Wright[20] found a lowered glucose tolerance as shown by the tolerance curves. None of these patients had glycosuria before the sugar was administered but eight showed a mild glycosuria at the end of three hours. In a control group of nine obese females without hypertension, no abnormality in glucose tolerance was found. According to these authors, no definite cause for the production of any one finding in this syndrome can be set forth. They expressed the opinion that each of the three conditions intensified the other with a resultant vicious circle being established.

In pathologic processes of the kidneys the most likely cause for glycosuria is damage to the parenchyma, reducing reabsorption from the tubules.

If the liver is involved in the diseased condition the glycosuria probably is due to impairment of the normal processes of glycogenesis and glycogenolysis.

In hypertension, the urinary sugar may result from renal damage, over-stimulation of the sympathetic nervous system, or a combination of the two.

The finding of glycosuria in cancer has been such a prominent feature that extensive investigation[27, 28] has been carried out to determine whether or not any particular type of tolerance curve was typical of this pathologic process, but the results were disappointing. It was found that various disease processes with diminished glucose tolerance, though definitely unrelated conditions, exhibited very similar curves.

F. Glycosuria Due to Chemical Agents: Glycosuria following poisoning with various chemical agents is frequently seen and great care should be taken to elicit such a history in all patients excreting sugar in the urine where another cause is not obvious.

The various substances producing sugar in the urine exert their action on certain

organs concerned in the metabolism of carbohydrates, which in turn results in the abnormal urinary finding.[2]

Thus caffeine, diuretin, morphine, strychnine and chloroform cause glycosuria by stimulating the central nervous system; while curare, carbon monoxide and heavy metals act peripherally, probably on the liver cells.

Goettsch and Mason[29] reported a case of lead poisoning in which there was a consistent glycosuria without relation to meals and with a normal or depressed blood-sugar level. They expressed the view that the findings in this case were suggestive of kidney damage and that the condition should be classified as renal glycosuria.

The glycosuria occurring in ether, chloroform or nitrous oxide and oxygen anesthesia, according to Joslin, results from acidosis produced by the anesthetic.

G. Mellituria Other than Glycosuria: The various other causes of mellituria are not to be discussed in this paper, aside from pointing out that it is important to determine the type of reducing sugar present in the urine.

SUMMARY

Various conditions in which non-pancreatic glycosuria is frequently encountered are discussed, chiefly from the standpoint of production of sugar in the urine.

Hypofunction of the islet tissue of the pancreas is at fault in the large majority of cases of glycosuria but 15 per cent of such instances are due to extra-pancreatic conditions.

There is a complex state of equilibrium involving many factors which control carbohydrate metabolism. A number of physiologic processes are normally brought into play to promote economic "utilization" of glucose, which consists of oxidation by the tissues and storage in an easily available form.

The renal threshold acts as a stabilizing factor to maintain a fairly constant blood level of glucose for immediate oxidation by the tissues as required. In certain conditions such as endocrine disorders, stimulation of intracranial centers, infections, chronic and degenerative diseases or the action of various chemical agents, the balance is upset. When this occurs glycosuria results from one of two causes: (1) Lowering of the renal threshold, or (2) a marked rise in the blood-sugar level above the normal renal threshold.

CONCLUSIONS

1. About 15 per cent of cases of glycosuria are non-pancreatic in origin.

2. An accurate diagnosis of non-pancreatic glycosuria is essential from the standpoint of treatment and prognosis.

3. Subsequent development of true diabetes mellitus is uncommon in non-pancreatic glycosuric individuals.

4. Renal glycosuria is due to diminished power of reabsorption of glucose from the proximal convoluted tubules at normal plasma levels, but is not due to any organic renal defect.

5. The basic cause of the various "unclassified glycosurias" is very complex. Although many advances have been made with reasonable explanations in some of the conditions, many questions remain unanswered at the present time.

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Medical and Surgical Journal

Established 1844

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News material for publication should be received not later than the eighteenth of the month preceding publication. Orders for reprints must be sent in duplicate when returning galley proof.

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THE AMERICAN MEDICAL ASSOCIATION

One never comes away from the meetings of the House of Delegates of the American Medical Association without a feeling of admiration for the work that is done by the delegates at this, their annual business session. These men are most attentive at meetings; a group of them are appointed to reference committees, which committees often have a tremendous amount of work to accomplish before they can report back to the House of Delegates. One has the firm conviction that this House of Delegates is composed of as fine a group of high principled, intelligent men as could be gotten together anywhere in the United States or, in modern phraseology, on this globe.

The meeting this year of the House of Delegates was characterized by a unity of feeling that we are living in serious times, that our profession need be on its guard to obviate disruption of medical practice as now carried out, in view of the possibilities of what might happen after the war is over. The House took cognizance of changing times and changing customs. To meet intelligently and to be prepared to forestall revolutionary changes in medical practice, a new Council was created which should be a very important accretion to the Councils already formed by the House of Delegates and by the Trustees. This new Council will deal with problems that have more to do with the economic and social sides of our profession than the American Medical Association has seen fit, through its officers and delegates, to deal with in the past. The American Medical Association has always been a scientific organization and has been so classified by the Department of Internal Revenue, but nevertheless science can only function satisfactorily when there is a firm and substantial pedestal of security, with economic and intellectual independence. To obtain these is part of the function of organized medicine.

The House of Delegates of the American Medical Association, as president elect, selected for the coming year Dr. H. L. Kretschmer who, for some ten years, has been treasurer of the American Medical Association and who has given much time to its financial problems. The notice of the election of this officer and other officers will have appeared in the Journal of the American Medical Association before the appearance of these editorial comments. The House of Delegates has made a wise selection of an able physician to head the American Medical Association. The same may be said of the other recently elected officers.

The Distinguished Service Award was conferred on Dr. Elliott P. Joslin of Boston. The selection of this outstanding physician reflects the sentiment of the House that the award should go to men in the profession who have been real leaders. This award has only been given a very few years. It will be remembered that Dr. Matas was the first recipient of the Distinguished Service Medal.

The two representatives of the Louisiana State Medical Society were active at all times in the performance of their duties as delegates. Dr. Leon Menville served on the reference committee on Medical Education and Hospitals. It should be pointed out that it is to the reference committees, thirteen in number, to whom the reports and motions are referred for their approval or disapproval. These committees play an extremely important part in the business of the House. The ultimate and final action of the House is usually based upon the report of the references committees when this report is presented at a succeeding session of the House.

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WAR TIME GRADUATE MEDICAL MEETINGS

Under the auspices of the American Medical Association, the American College of Physicians and the American College of Surgeons and authorized by the Surgeons General of the Army, Navy and Public Health Service, a committee has been set up to provide for an educational program which would benefit the doctors in the armed services, as well as civilian doctors. This proposed program is an elaboration of the teaching plan started by the American College of Physicians and carried out most successfully in the Boston, Chicago and Philadelphia areas. As result of the success of this meeting, innumerable requests have been made to place a similar type of program in the large Army and Navy hospitals throughout the country.

It is realized and appreciated that the medical man working in a hospital has continuous contact with patients and is able to continue with his medical or surgical work. As a matter of fact the men in big station and general hospitals have had unexcelled opportunity of practicing medicine at its best. Surrounded by splendid representatives of the medical profession of this country, they have all the latest and most modern equipment as well as access to, unfortunately limited, library facilities. The medical officers who are with combat organizations do not have, except to a very minor degree, very much strictly professional work to carry out. If a man is taken sick in the field or in the camp he is at once transferred to a hospital. These officers have always before them the fear that they will become stale and will not be able to keep up with medical progress.

While the medical meetings will be held in big hospitals they should be primarily for the men in the field. They may be of benefit also to the civilian doctors who live or reside near the various governmental medical instillations scattered all over the United States.

Organization of the committee which will function as the guiding spirit of numerous subcommittees in different geographical areas of the country, has progressed rapidly. In some areas already these war time graduate medical meetings have been arranged for or have been conducted. In a general way they call for six hours of ward walks, clinics, demonstrations and conferences. These will be held in the afternoon and evening so they will not interfere with the daytime activities, except to a slight degree, of the medical officers.

The scope of the teaching schedule can vary considerably. In some areas it may be possible to have only a one day conference with two qualified lecturers from civilian life. Comprehensive plans include the formation of a schedule with a large group of teams representing different medical specialties to hold five or six consecutive day meetings. Possibly these meetings would be held in only one hospital but if there are nearby hospitals, in those that are available.

Altogether the plan for the war time graduate medical meetings seems to be a splendid concept. It will bring to medical

officers in the field qualified teachers who will present to the men what they are doing in the way of practice; it will give the field, hospital and civilian doctors new ideas, new thoughts and a refreshing of general medical knowledge.

CONTROL OF AIR-BORNE INFECTION

Robertson* writes to the effect that the medical profession is becoming more and more aware of the importance of the role played by air in transmitting respiratory diseases. The profession has very generally believed that physical agents such as the sun, heat and drying are most effective in destroying micro-organisms. For the last few years much evidence has been brought forth to show that bacteria are widely distributed in the air. They have been recovered from the stratosphere and from freshly fallen snow in the polar regions. Certain plant diseases have been transmitted a distance of a thousand miles in forty-eight hours. While it is true that air-borne infection in the open spaces is probably of minor importance in the pathogenesis of disease in man, within enclosed areas on the other hand it is probable that the great number of respiratory tract infections originate. A striking example of this statement, in the last war these particular diseases accounted for 80 per cent of the deaths due to disease and not to battle casualties. In the present war the country has been singularly fortunate in the few deaths that have occurred from respiratory tract infections. On the other hand, half of the patients admitted to general and camp hospitals have entered these instillations because of some acute infection of the upper, and often lower, respiratory tract.

Because of the now well appreciated fact that close contact with their fellowmen may produce and bring about respiratory tract infection, in the last few years many studies have been undertaken which have to do with the control of these air-borne infections. The simplest preventive measure is the isolation of the sick man and the masking of those who come in contact with him, but unfortunately the most virulent organisms may be found in the respiratory tract just prior to the onset of clinical symptoms. The problem is to devise ways and means of sterilizing the air in schools, movies, churches and other places where people congregate in close quarters and in relatively small places. Ultraviolet radiation has been employed by certain investigators with apparently excellent results. The use of the ultraviolet radiation for air sterilization is, however, limited because the persons in irradiated rooms have to be shielded from the direct light so that only the upper air in the rooms can be sterilized.

Chemical air sterilization is a method that originated with Lister when he used carbolic acid sprays in the immediate vicinity of his operative field. Within the last few years dispersed germicidal mists have been employed in certain institutions under investigative conditions. The ideal agent for this purpose has not been as yet discovered. The air sterilizing material must be non-toxic, odorless, tasteless and non-irritating but one which is still able to kill bacteria suspended in the air. Certain chemical preparations have proved reasonably effective but the problem is still unanswered and unsolved concerning the best way of dispersing the agent in the air so that it can be evenly distributed throughout. A difficulty arises also from the problem of determining the concentration that is required under certain ventilating conditions. Lastly, these potent vapors might possibly have a toxic effect on an individual if contact was maintained with them for too long a period of time. A few hours' contact does not occasion any reaction but repeated and long continued contact might possibly bring about certain toxic effects as for example with propylene glycol vapor which is the particular substance that Robertson has been employing.

A large and broad field in preventive medicine has been opened by Robertson and other investigators. It is quite possible, with air conditioning, with saturation of

*Robertson, O. H.: Air-borne infection, Science, 97:495, 1943

the air with germicidal agents, that the problems of winter colds and coughs, pneumonias and influenza may be ultimately solved.

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THE ORGANIZATION SECTION

Under the above caption a new section will be added to the New Orleans Medical and Surgical Journal. This section will have to do with the policies and future plans of the State Medical Society particularly, as well as the broad policies of organized medicine as a whole. The contributors to this section will be the president, the secretary-treasurer and from time to time it is hoped as well that the councilors will present their points of view in regard to the broad aspects of medicine from the organization standpoint. This section will be informatory in that it will dilate upon the policies of the organization in the intervals between the meetings of the House of Delegates. In the present day period of unrest and general disturbances it will devolve upon the Council to make immediate decisions about matters which cannot be delayed until the House of Delegates meets.

The section will be informatory also in that there will be discussed here the economic and social problems which are confronting the medical profession every day and in ever increasing numbers. It is hoped that the readers of the Journal will peruse this page regularly in order to keep abreast of the whys and wherefores of actions taken by the House of Delegates at the recent meeting, in order to be informed of latest developments in economic medicine and in order to have knowledge of what the officers in the Society are doing for their members.

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ORGANIZATION SECTION

The Executive Committee wishes to dedicate this page to the members of our profession, feeling that a proper discussion of salient issues will contribute to the understanding and fortification of our Society. An informed profession should be a wise one.

WHY INCREASE STATE DUES?

Unquestionably why the need for an increase in the State Society dues is being asked by many of our members. A few relevant facts may help to clarify any confusion.

The medical profession of this state and nation is now facing the greatest test of the present time involving the basic principles of organized medicine. Never will physicians be called upon for such momentous decisions which may reflect the destiny of our American way of life, principles for which we are now fighting and hope to retain. Up to November, 1942 there were some 400 members of the Louisiana State Medical Society called into military service. We, who are at home, have a definite and specific obligation to preserve during their absence, the practice of medicine on a high plane, so that when they return to civilian practice ample opportunities will be available for the rightful restoration of their practice. So as a patriotic gesture the House of Delegates voted to delete the 1943 dues of every physician in military service who was a member of the Society in 1942. This is a privilege which all of our civilian doctors should recognize as an opportunity to maintain the status of the medical profession while our confreres are fighting for our preservation at the front.

In keeping with the demands of the time, it was also thought expedient to establish a circulating library for the entire state. An energetic committee is now at work with the hope of very shortly developing suitable plans for its perfection.

Another matter for your consideration is that we doctors are being brought very seriously face to face with legislative problems affecting the practice of medicine nationally and locally. The condition is acute and demands immediate activity. To forestall any

radical processing of medicine will require the most careful and attentive watchfulness in the national capital by groups, qualified and dependable, to prevent such alterations. That this is probably a most serious condition no one well informed can deny.

These are a few of the problems which your House of Delegates is trying to solve for your protection. They may become more intense on the slightest provocation. To safeguard and protect these sacred obligations takes money, more money than could be realized from even a substantial increase of dues. If organized medicine is successful in combatting ill-advised projects, no one will feel the worse for the increase. The most critical can not deny the sincerity and unanimity of the House of Delegates in its attempt to meet the far reaching problems for the benefit of the profession.

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EXCERPT FROM PRESIDENT IRWIN'S ADDRESS TO HOUSE OF DELEGATES

"It is my belief that, on the whole, doctors are called upon to contribute less to the financial support of their organization than any other similar group of individuals. Only sufficient money is contributed to offset expense of operation and the publication of a scientific magazine. I say to you, the time has come when the horizon of operation must be widened; other fields must be entered for our preservation as a self-controlled and guided profession. To accomplish this, we must be no longer complacent, we must be active, money must be had and interest in the profession must be fired to a newer heat. There is no goal too high for accomplishment if the doctors will become determined. They can do it, they must do it, and they will do it. Our organization is pitifully poor, financially; unable to carry on a campaign against the most insignificant foe. Its financial position must be improved. The time for a simple altruistic organization has passed, the economic existence of every member must be preserved and maintained or improved. Other groups have grown into powerful groups, but not without money. We must become stronger or perish. It is my belief that every physician should contribute annually to the support of his profession the sum of one hundred dollars; $25.00 to his local society, $25.00 to the national society, and $50.00 to his state society. The greater portion should go to the state organization because it is the unit of operation. It has been my observation that one is only interested genuinely in that into which he has invested and to the degree of his investment. This amount of money will make an organization secure, powerful and will insure its continuance. This expenditure by each member will be returned many fold in benefits gained. I do hereby advocate and urge approval of the House of Delegates of this financial suggestion."

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TRANSACTIONS OF ORLEANS PARISH MEDICAL SOCIETY

CALENDAR OF MEETINGS

July 1 Clinico-pathologic Conference, Touro Infirmary, 11:15 a. m. to 12:15 p. m.
Executive Committee, Baptist Hospital, 8 p. m.

July 5 Board of Directors, Orleans Parish Medical Society, 8 p. m.

July 6 Eye, Ear, Nose and Throat Staff, 8 p. m.

July 7 Clinico-pathologic Conference, Charity Hospital Morgue Amphitheater, 1:30 p. m.

July 8 New Orleans Hospital Council.

July 12 Joint Scientific and Second Quarterly Executive Meeting, Orleans Parish Medical Society, 8 p. m.

July 14 Clinico-pathologic Conference, Charity Hospital Morgue Amphitheater, 1:30 p. m.

July 15 Clinico-pathologic Conference, Touro Infirmary, 11:15 a. m. to 12:15 p. m.

July 19 Clinico-pathologic Conference, Baptist Hospital, 8 p. m.

July 21 Clinico-pathologic Conference, Charity Hospital Morgue Amphitheater, 1:30 p. m.
Clinico-pathologic Conference, Hotel Dieu, 8:15 p. m.

July 22 Clinico-pathologic Conference, Touro Infirmary, 11:15 a. m. to 12:14 p. m.

DePaul Sanitarium Staff, 8 p. m.
July 28 Clinico-pathologic Conference, Charity Hospital Morgue Amphitheater, 1:30 p. m.
July 29 Clinico-pathologic Conference, Touro Infirmary, 11:14 a. m. to 12:15 p. m.
July 30 L. S. U. Faculty Club, 8 p. m.

During the month of June the Society held one regular meeting. The program was as follows:
Symposium on Uses of Sulfonamides:
Sulfonamides in Internal Medicine, by Dr. C. J. Tripoli.
The Use of Sulfonamides in Surgery, by Dr. Isidore Cohn.
Sulfonamides in Urology, by Dr. W. A. Reed.
Sulfonamides in Gynecology and Obstetrics, by Dr. Curtis Tyrone.
Sulfonamides in Dermatology, by Dr. James K. Howles.
Sulfonamides in Otolaryngology, by Dr. Wm. A. Wagner.

Dr. Jacob Barnett and Dr. J. A. Danna attended the annual reunion of the "Class of 1893 of old Boys' High school," held June 13.

Dr. Guy A. Caldwell was recently appointed chairman of the health division of the Council of Social Agencies.

At a meeting of the Eighth District Medical Society in Alexandria held June 7, Drs. Edgar Hull and J. D. Rives spoke on war gas casualties, and Dr. Eugene Countiss spoke on emergency medical service in Louisiana.

Drs. Herman B. Gessner and E. A. Jurgelwicz attended the recent annual meeting of the Tulane Alumni Fifty-Year Arts and Science Club.

At the annual meeting of the Louisiana Society for Crippled Children, recently held in New Orleans, Dr. F. L. Jaubert was re-elected president.

Dr. Ada S. Kiblinger, president of the New Orleans Quota Club, delivered the address of welcome at the opening of the seventh annual conference of the Quota Club International, recently held in New Orleans.

Dr. John H. Musser recently attended a meeting of the Council on Medical Education and Hospitals in Chicago. Dr. Musser also attended a meeting of the house of delegates of the American Medical Association and the three days of examinations of the American board of internal medicine.

Drs. W. R. Brewster and Sims I. Chapman were recently promoted from the rank of lieutenant commander to commander. Both are attached to the Eighth Naval District headquarters, New Orleans.

Mr. Alfred J. Kuhlmann, Executive Secretary, is being congratulated on the birth of a son, born June 19.

LOUISIANA STATE MEDICAL SOCIETY NEWS

CALENDAR

PARISH AND DISTRICT MEDICAL SOCIETY MEETINGS

Society	Date	Place
East Baton Rouge	Second Wednesday of every month	Baton Rouge
Morehouse	Second Tuesday of every month	Bastrop
Orleans	Second Monday of every month	New Orleans
Ouachita	First Thursday of every month	Monroe
Rapides	First Monday of every month	Alexandria
Sabine	First Wednesday of every month	
Second District	Third Thursday of every month	

BI-PARISH MEDICAL SOCIETY

The Bi-Parish Medical Society met in Angola, as the guests of Dr. M. A. Walker and Staff. After a bounteous repast prepared by the officers and attendants of the Louisiana State Penitentiary, the following Scientific Program was presented:

Dr. J. D. Martin read an excellent and instructive paper on syphilis, stressing especially the infectious stages of this disease and treatment for same. This paper was favorably discussed by members present.

Dr. George Fasting, pathologist, Charity Hospital, New Orleans, gave us a very instructive and helpful discussion relative to bacillary dysentery, stressing his epidermal method of treatment. This paper was also favorably discussed by those present.

Warden D. D. Bazer gave an interesting talk thanking the Society for meeting in the Institution; his address was appreciated by all present.

Father Marioneaux, Catholic Chaplain of the Louisiana State Penitentiary, gave an interesting discussion, stressing the point of the danger of the youth and the young people of our state and nation, relative to the moral aspect and the danger of the teen age especially with the Army of our nation,

and the responsibility to a great extent of the mothers and fathers of the commonwealth.

Dr. Martin also made a startling, nevertheless true assertion that the great percentage of acute infectious cases of syphilis was formerly prostitutes, but now about 80 per cent of the cases treated in the Health Unit are girls in the teen age. Therefore, it behooves us, the mothers and fathers of this nation, to take notice and throw every safeguard around the girls of our nation in our homes, that the virtue of womanhood may not deteriorate.

Drs. J. D. Martin, B. F. Smith and R. H. Hanson were elected members of our Society; Dr. George Fasting of New Orleans, was elected honorary member. A vote of thanks was extended to Drs. Martin and Fasting for their excellent papers. Also a vote of thanks was extended to Father Marioneaux for his timely talk before our Society.

The Society adjourned to meet the first Wednesday in September at 7:30 p. m. in the East Louisiana State Hospital.

Dr. M. A. Walker, President.
Dr. E. M. Toler, Sect. Treas.

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COMMISSIONING CEREMONY

The United States Naval Hospital at New Orleans was officially commissioned with the hoisting of the colors on the morning of June 1. A very interesting ceremony took place at this time. The enlisted personnel, the nurses, and officers paraded before the Commanding Officer, Captain C. W. Ross, following which the Acting Commandant of the Eighth Naval District, Captain E. T. Oates, authorized the commissioning of the hospital. His remarks were followed by a short address by Captain Ross. Following this formal ceremony, luncheon was served at the exercises and the hospital was opened for inspection.

The hospital is beautifully organized, splendidly equipped, and situated on the Pontchartrain lakefront. At the present time it has accommodations for some 400 patients, but can be increased rapidly in size, if necessity arises, to an institution holding 1,500 to 2,000 patients.

The following doctors were among the other invited guests:

Comdr. W. P. Gardiner, Dr. George Taquino, Dr. Ashton Thomas, Dr. Kermit Brau, Dr. A. J. Hockett, Dr. Ernest Celli, Dr. John T. Crebbin, Dr. Frank Gomilla, Dr. J. A. Henderson, Dr. Val Fuchs, Dr. C. G. Cole, Dr. Roy B. Harrison, Dr. Isidore Cohn, Dr. H. Vernon Sims, Dr. Edgar Hull, Dr. John W. Atkinson, Dr. Paul Talbot, Dr. Rudolph Matas, Dr. Emmett Irwin, Dr. Urban Maes, Dr. John Musser, Dr. Marcus Magruder, Dr. O. P. Daly, Dr. David E. Brown, Dr. H. B. Alsobrook, Dr. E. H. Lawson, Colonel Sydney Smith, Dr. L. E. Hooper, Dr. Alton Ochsner, Dr. B. I. Burns, Dr. Hiram Kostmayer, Dr. Williams, Dr. John Whitney, Comdr. Roger Brewster.

NEWS ITEMS

Dr. James D. Rives, Clinical Professor of Surgery of the Louisiana State University School of Medicine, was elected to membership in the American Surgical Association last year. The only other New Orleans members are Dr. Rudolph Matas, Dr. Alton Ochsner, Dr. Mims Gage, and Dr. Urban Maes.

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Major George Haik has been assigned by the Army to Harvard Medical School where he will take a special course in plastic surgery of the eye.

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The American Congress of Physical Therapy will hold its twenty-second annual scientific and clinical session September 8-11, Palmer House, Chicago.

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Applications for the 1944 examinations of the American Board of Obstetrics and Gynecology must be in the secretary's office, 1015 Highland Building, Pittsburgh, Pa., before November 15.

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There will be no rationing of x-ray films. Private radiologists will enjoy the same rights as hospitals and clinics in obtaining films; no preferential treatment will be given to hospitals. There is an abundance of materials required in the manufacture of roentgen films. Productive facilities are taxed to the utmost. Although supplies will be reduced, there is no expectation of an acute shortage, according to special bulletin of the American College of Radiology.

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Basil O'Connor, President of The National Foundation for Infantile Paralysis, announced today the addition of nine members to the Board of Trustees of that Foundation, making the total number of Trustees thirty-nine.

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The medical advisory committee of The American Foundation for Tropical Medicine, Inc., authorized grants to six North American medical schools totalling $26,100 during the first quarter of 1943, according to a report by Dr. J. A. Curran, executive director, at a meeting of directors of the Foundation in New York City on April 14.

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SOUTHERN BAPTIST HOSPITAL

The regular monthly meeting of the Clinical Staff of the Southern Baptist Hospital was held on Tuesday, May 25 at 8 p. m. The following program was presented: Intravertebral Disc Lesion by Dr. Rufus Alldredge; Presentation of a Case by Dr. F. L. Ware.

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The regular monthly staff meeting of the Southern Baptist Hospital was held Tuesday, June 22. The program consisted of a detailed report of Therapeutic Uses of Human Blood Plasma by Dr. J. W. Davenport, Jr.

The Southern Baptist Hospital, as has practically all hospitals, is suffering from shortage of professional technical help. It has been necessary for Dr. Magruder, Director of the Radiology Department, to limit the number of gastrointestinal series and barium enemas to be handled daily in the Department of Radiology.

OCHSNER CLINIC

The regular monthly meeting of the staff of the Ochsner Clinic was held on Friday, June 18. The program consisted of a paper by Dr. Harry D. Brown on Unilateral Renal Disease and Hypertension. Dr. Granville Bennet, recently selected as head of the Department of Pathology at Tulane, then presented a most interesting discussion with lantern slides, The Pathology of Rheumatoid Arthritis and Rheumatic Fever. The last formal presentation was a movie film shown by Dr. Lewis Golden, illustrating methods and results of electric shock therapy in certain mental conditions.

SOCIETY FOR EXPERIMENTAL BIOLOGY AND MEDICINE

The Southern Section of this organization met at the Louisiana State University School of Medicine on Friday, June 25. The following program was presented: "Electrocardiographic Changes, the Ischemia-Injury Pattern, Produced in the Dog by Temporary Coronary Occlusion" by Robert H. Bayley, John S. LaDue, and Dorothy York; "A Study of the Sedimentation Rate of the Erythrocytes in Sickle Cell Anemia" by Travis Winsor and George E. Burch; "Certain Physico-chemical Characteristics of the Blood in Sickle Cell Anemia, Used as Objective Diagnostic Tests" by George E. Burch and Travis Winsor; "Occurrence of Nucleated Erythrocytes in Newly Born Infants of Rh-compatible Mothers" by Albert E. Casey and S. H. Crowson; "Plasma Protein Changes in Asphyxia" by D. Bailey Calvin; "Differentiation of Aerobic Spore-forming Bacilli by a New Sudan Black-B Fat Staining Procedure" by Kenneth L. Burdon and Carl Lamanna; "The Preparation and Testing of a Specific Antigen for Diagnosis of Human Strongyloidiasis" by Mary Jane Crump Brannon.

SOUTHERN MEDICAL ASSOCIATION

Dr. Lucien A. LeDoux, Chairman of the Council of the Southern Medical Association and of its Executive Committee, at a meeting held May 27 in the Roosevelt Hotel, announced that the next meeting of the Association will be held in Cincinnati, Ohio, November 16-18. The committee decided that war had not lessened the need for such a meeting, which will be equally divided between civilian and military medicine.

SCHENKEN ON CENSOR BOARD

Dr. J. R. Schenken, head of the Department of Pathology and Bacteriology of the Louisiana State University, was recently elected a member of the Board of Censors of the American Society for Clinical Pathologists at the annual meeting of this organization in Chicago.

UNITED STATES PUBLIC HEALTH SERVICE

Surgeon David C. Elliott has been relieved from duty in New Orleans and sent to Savannah, Georgia. Past Asst. Surgeon Edgar M. Scott, Jr., has been relieved from duty in New Orleans and sent to Ketchikan, Alaska.

INFECTIOUS DISEASES IN LOUISIANA

For the week ending May 8 diseases reported to the State Board of Health in numbers greater than 10 include 106 cases of measles, 67 of German measles, 31 of pulmonary tuberculosis, 19 of chickenpox, and 10 of scarlet fever. This weekly report was the one that contained as well the monthly report of the venereal diseases. In the past month there have been 2,529 cases of syphilis, 1,157 of gonorrhea, and 125 of chancroid. During this period there were listed also among some other rarer diseases six cases of malaria, five of meningococcus meningitis, and two of undulant fever. There were listed 77 cases of unclassified pneumonia. For the week which closed May 15 there were reported 66 cases of mumps, 63 of measles, 24 of German measles, 18 of cancer, 17 each of chickenpox and pulmonary tuberculosis. There were two additional cases of malaria reported this week, three of meningococcus meningitis, as well as four of typhus fever. There were 47 cases of unclassified pneumonia. For the week which came to an end on May 22, 154 cases of pulmonary tuberculosis were reported. There were also 37 of measles, 18 of mumps, 13 of hookwarm infestation, 12 of German measles, and 10 of chickenpox. There were also reported five cases of meningitis and 22 cases of unclassifield pneumonia. For the week ending May 29 tuberculosis again led the list of reportable diseases with 130 entered in the records of the Department of Epidemiology of the State Department of Health. Other diseases greater than 10 in number include 19 incidences of hookworm infestation, 16 of measles, 14 of whooping cough, and 13 of mumps. There were no cases of malaria nor of meningitis reported this week. There was, however, a case of poliomyelitis in Calcasieu Parish. It is to be noted also that there were only eight instances of unclassified pneumonia. For the week coming to an end June 5 there were reported 147 cases of pulmonary tuberculosis, 27 of measles and 26 of mumps. The monthly venereal disease report came out this week. There were reported 1,514 cases of syphilis, 863 of gonorrhea, 134 of chancroid, and 16 of lymphopathia venereum. Four cases of typhus fever were reported this week, and a like number of meningococcus meningitis; also 31 cases of unclassified pneumonia.

OCD PLAN FOR EMERGENCY MEDICAL SERVICE IN INDUSTRIAL PLANTS

Every plant medical department should prepare a "disaster operations plan" to provide adequate medical service in case of a plant catastrophe involving large numbers of casualties. This is the advice presented in a new bulletin, "Emergency Medical Service for Industrial Plants," issued by the Medical Division of the Office of Civilian Defense.

The War and Navy Departments have urged that plants for which they are responsible plan to use the facilities and services of the Emergency Medical Service organized by Civilian Defense authorities. The Medical Division has in turn urged that local Chiefs of Emergency Medical Service assist plant medical departments by placing the community medical facilities at their disposal in the event of a major emergency, regardless of its cause.

Pointing out that plant medical departments are not ordinarily staffed or equipped to provide medical service for the large number of casualties which may occur in a major disaster, the bulletin outline arrangements which should be made to assure adequate medical care at such times.

The disaster operations plan should provide for necessary first aid care at the site of the incident, for adequate ambulance service, and for hospitalization of the seriously injured, the bulletin advises.

Provision must first be made for Casualty Stations. Several sites should be selected, in order that alternative locations may be used in case those of first choice are destroyed or rendered unserviceable. An additional site outside the plant should be selected for use in the event of extensive damage to the plant, such as might occur in a bombing or explosion.

The importance of identification and record is especially emphasized in the bulletin.

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MEDICAL SOCIETY FORMED TO EXCHANGE INFORMATION WITH SOVIET UNION

The American-Soviet Medical Society has been founded to meet an increasing demand for information about the results and achievements of Soviet medicine. Reports have reached this country of spectacular feats of surgery wrought by the Soviet medical corps all along the far-flung battle line, from Leningrad to the Caucasus. These contributions to medicine are the results of twenty-five years of untiring effort, during which the Soviet-Union has built up an impressive system of public health and medicine. In hundreds of scientific research institutions behind the battle line, thousands of physicians and scientists are engaged in investigations. Yet the results are little known in this country, primarily because until now there has been no organization prepared to exchange medical information although the language in many cases has proved an almost insurmountable barrier. The American-Soviet Medical Society will fill his gap.

Through meetings, the publication of a journal and the establishment of a library of information, the Society will tell physicians of America and members of the allied professions on what problems our Soviet colleagues are working and what steps they are taking to solve them. On the other hand, the Society will send American medical books and periodicals to the Soviet Union in order to keep the Russians informed of scientific developments in this country and to stimulate closer cooperation between the medical corps of the two countries. After the war, as soon as conditions permit, the Society hopes to promote the exchange of students and scientists and to sponsor study tours in the two countries.

The president of the Society is Dr. Walter B. Cannon, professor emeritus of physiology at Harvard University, member of the National Academy of Sciences of the United States and of the Academy of Sciences of the U.S.S.R.

Dr. Henry E. Sigerist, director of the Institute of the History of Medicine, Johns Hopkins University, is the editor of the journal which will be known as the American Review of Soviet Medicine.

The temporary offices of the Society are at 130 West 46 Street, New York City.

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CORRESPONDENCE

Editor, New Orleans Medical and Surgical Journal
New Orleans

Dear Sir:

On behalf of the Trustees of the Southwestern Medical Foundation, I am writing you concerning a movement now under way to build a great Medical Center for the people of the southwestern area of our country.

It is our desire to acquaint the people of your community with the plans and to keep them informed of progress as we proceed with the program.

For your information, the Southwestern Medical Foundation was given a charter by the State of Texas in 1939 as a non-profit, public institution, with management vested in a Board of Trustees. It is absolutely non-sectarian, deriving its strength and spreading its benefits without regard to creed or denomination. Its aid is to use every practicable means known to modern science to improve the health and happiness of the people of the Southwest. This includes the sponsoring of medical research and teaching, as well as measures designed to improve health.

This Greater Medical Center will contain provision for modern medical education for student doctors and post-graduate students in medicine. It will have adequate facilities and modern equipment for extensive research in the whole field of medicine, both clinical and preventive. Periodic clinics will be held for practicing physicians of the Southwest where they might come to keep abreast of the rapidly expanding developments in

the medical field. It will offer training courses for nurses, laboratory technicians, social service workers, and all interested in the field of public and private health.

While the ultimate goal is a $25,000,000 Medical Center, the first, an immediate objective, is a fund for one and a half million dollars with which to build and equip Main Medical and Dental School buildings—the first unit of the master plan. The medical center program calls for the establishment of thirty-six hospital and medical institutions on a thirty-five acre tract acquired for that purpose.

The newly organized Medical School of the Southwestern Medical Foundation will open in Dallas on June 21. The Foundation has accepted the applications of former faculty members of the Baylor University School of Medicine and now has a complete faculty. Two hundred and thirty Baylor medical students have applied for admission and will constitute the upper three classes of the new institution. At present only a few places remain open for the freshman class and preference for these will be given the young people of the Southwestern area of our country.

A local campaign is to be launched immediately for the first objective of a million and a half dollars for the main school buildings. In addition, a fund of $100,000 a year for not less than ten years has been pledged by directors of the Dallas Chamber of Commerce and the Citizens' Council for maintenance and development.

Occasionally, we shall send you literature and news releases and shall be grateful for any cooperation you may give this worthy project.

Our Southwestern territory has no great medical center, and this is the greatest of all existing needs. This Greater Medical Center will make available better medical care for all the people of the Southwest—those unable to pay as well as those who are able to meet their medical expense. The citizens of Dallas are doing their full part in the development of this center.

Sincerely yours,
Southwestern Medical Foundation,
E. H. Cary, President.

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WOMAN'S AUXILIARY

The following are the officers of the Woman's Auxiliary to the Louisiana State Medical Society for 1943-1944:

Officers

President—Mrs. George J. Taquino, 18 Fontainbleau Drive, New Orleans.

President-elect—Mrs. Rhodes Spedale, Plaquemine.

First Vice-President—Mrs. W. R. Harwell, 715 Elmwood, Shreveport.

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Chairmen of Standing Committees

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Exhibits—Mrs. Donovan C. Browne, 4920 St. Charles Avenue, New Orleans.

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Indigent Widows—Mrs. Aynaud Hebert, 2013 Napolen Avenue, New Orleans.

Legislation—Mrs. Roy B. Harrison, 2327 Napoleon Avenue, New Orleans.

Organization—Mrs. B. C. Garrett, 4700 Fairfield, Shreveport.

Parliamentarian—Mrs. M. H. Foster, 1316 Albert, Alexandria.

Press and Publicity — Mrs. M. C. Wigginton, Hammond.

Printing—Mrs. Willard Wirth, 402 Vincent Avenue, New Orleans.

Program—Mrs. DeWitt Milan, 1704 Island Drive, Monroe.

Public Relations—Mrs. John S. Dunn, 8410 Pontchartrain Blvd., New Orleans.

Red Cross—Mrs Clarence B. Erickson, 423 Herndon Avenue, Shreveport.

Revision of By-Laws—Mrs. C. Grenes Cole, 4938 St. Charles Avenue, New Orleans

Councilors

First District—Mrs. Daniel J. Murphy, 127 S. Solomon Street, New Orleans.

Second District—Mrs. Daniel N. Silverman, 47 Versailles Blvd., New Orleans.

Third District—Mrs. C. C. deGravelles, New Iberia.

Fourth District—Mrs. R. T. Lucas, 535 Perremont Road, Shreveport.

Fifth District—Mrs. A. G. McHenry, 1910 Riverside Drive, Monroe.

Sixth District—Mrs. A. W. Martin, 902 Virginia Avenue, Bogalusa.

Seventh District—Mrs. J. D. Frazar, DeRidder.

Eighth District—Mrs. H. O. Barker, Horse Shoe Drive, Alexandria.

The above list represents a fine group of hard working conscientious women from all over the State. I should like to add that even though some of the Parish Auxiliaries have disbanded for the summer, I believe that all members of the Louisiana State Auxiliary will double their efforts in their defense and American Red Cross work. I also wish for them a very happy and pleasant summer.

Alice S. Taquino, President.

BOOK REVIEWS

Ovarian Tumors: By Samuel H. Geist, M. D. New York, Paul B. Hoeber, 1942. Pp. 527. Price, $10.50.

The book, by Samuel H. Geist, is in all probability the most complete publication on the subject of ovarian tumors that has, to date, been presented. The book covers all data which are essential as a background for the complete understanding of ovarian tumors and the latter material, usually so difficult, is written in a clear and easily digested language. The author presents a classification which is accurately based on histogenesis, is not the least confusing and is one which should be acceptable to pathologist and clinician alike. The terminology conforms to that currently used and consequently will not confuse the student. The subject material is systematically discussed and includes, besides the anatomy and physiology of the ovary, general considerations of the tumors and very helpful points in the diagnosis of such tumors. All tumors which occur in the ovary are discussed in detail and for each tumor the author includes definition, terminology, the incidence, pathologic anatomy, both gross and microscopic, the clinical aspects, and therapy.

One of the outstanding features of the book is the most extensive bibliography which clearly indicates that the text material represents as nearly a complete coverage of the literature as is possible to present.

The plates are excellent and clearly illustrate the typical appearance of both the gross and microscopic features of the tumors.

J. ALLEN CHAMBERLAIN, M. D.

Blood Grouping Technic: By Fritz Schiff, M. D. & William C. Boyd, Ph. D. New York, Inter-Science Publishers, Inc., 1942. Pp. 239. Price, $5.00.

The authors of this little volume have compiled a very adequate presentation of blood grouping technics. They do not purport to have completely reviewed all the material pertaining to the subject, but have endeavored to present such procedures as they have found practical and reliable from their own experience. The subject matter is comprehensively treated and written in a lucid, readable style. Drs. Schiff and Boyd have employed a decimal system in arranging the headings and sub-headings of their subject matter which this reviewer at times finds rather distracting, although it is intended to clarify the relationship between the various topics under discussion.

The book is divided into three parts. The first is a brief consideration of the theoretical principles underlying blood grouping.

The second part contains clear and concise directions for various technics of blood grouping, some applicable for use in the average laboratory, and others of a more highly specialized nature. There is valuable information given here concerning the apparatus required in such studies, methods of obtaining and preserving specific sera, and interpretation of tests in determining various blood groups, as well as a discussion of the commonest sources of error in such determinations. In addition to comprehensive studies of the groups O, A, B, and AB, they also discuss the determination and significance of sub-groups and A and AB, types M and N, and the P and Rh factors.

The third and most detailed section deals with special applications of blood grouping technics. Of most general interest at present is that portion which deals with blood grouping in relation to blood donors—fully discussing technics of typing and cross-matching, additional requirements and examination of donors, use of the "universal" donor, and emphasizing the errors in technic and judgment which may lead to transfusion accidents and reactions. There is also included here a brief discussion of serum and plasma blood banks and their operation, as well as the use of substitutes for blood. The authors also present in this section a rather lengthy discussion of the uses, procedures, and limitations of the role played by blood grouping in forensic medicine, as in cases of disputed parentage and stains at the scenes of violence. The book concludes with a discussion of the still hotly disputed status of blood grouping in relation to anthropological studies.

GEORGIANA VON LANGERMANN, M. D.

Biochemistry and Morphogenesis: By Joseph Needham, F. R. S. Cambridge, at The University Press, and New York, The Macmillan Company, 1942, pp. xvi + 787, figs. 328. Price, $12.50.

In an earlier book (Chemical Embryology, 1931) Needham reviewed existing knowledge of the chemistry of the developing embryo and of the materials from which it is formed. He now brings this information to date and extends his review into the more recently investigated phases of developmental physiology, notably in connection with substances which act as morphogenetic hormones, substances

arising within the embryo and capable of inducing differentiation of structures. The fundamental character of the problems involved is indicated in the fact that the cited studies embrace the whole animal kingdom, ranging from protozoa through mammals, and that even some observations on plants find a place in the account. The book is in three parts. Part I concerns the substrate of embryonic development—the composition of eggs, their environment, nutrition of the embryo, the mammalian placenta and related topics. Part II is devoted to the factors which control morphogenesis, with special emphasis on organizers and genes. Part III considers the metabolism of the embryo, respiration, polarity, the disorganization of developmental processes.

The author states: "The whole object of the book, was, after all, to show that the fields of chemistry and morphology are not so sundered as is often supposed. Organizing relations are found at the molecular level and at the colloidal and at the paracrystalline level, the level of protein macromolecules and highly polymerised substances, just as clearly as at the anatomical level itself. Although we are still in the earliest stages of any real theory of living organization, we can yet see that biological order, like crystal order, but on a much more complicated plane, is a natural consequence of the properties of matter, and one characteristic mode of their manifestation." Both the collection of factual material and the points of view stressed by Needham make this book a useful reference for the embryologist, and indeed for any worker in the field of biology.

HAROLD CUMMINS, Ph. D.

Fundamentals of Immunology: By William C. Boyd, Ph. D. New York, Interscience Publishers, Inc., 1943. Pp. 446. Price, (not yet listed).

This excellent introduction to immunology serves to acquaint medical students, chemists, biologists and others with the basic principles of the science. The chief emphasis is on serology but the book has a slightly wider scope for methods of laboratory practice and some clinical applications are also discussed. One might wonder how a biochemist would interest himself in immunology and allergy. The answer is obvious when it is realized that the mechanisms involved are chemical. It is true of course that the chemical structure of the various antibodies is not known. Progress is being made rapidly however and the time may not be too distant when antibodies can be produced synthetically thus obviating the use of foreign sera on the one hand and long periods of desensitization on the other. Another excellent feature to the book is the use of accepted statistical principles. The book can be highly recommended.

VINCENT J. DERBES, M. D.

Reveal Lithiasis: By Charles C. Higgins, M. D. Springfield. Charles C. Thomas, 1943. Pp. 140. Price, $3.00.

Especially in these busy days of surgeons left at home (and even those in the armed forces), there is quite apt to be a concentration on *surgery* for renal calculi, and a "forgetfulness" of the causes of these stones and their prevention, especially postoperatively. In his excellently written, compact and precise book, Dr. Higgins gives a brief summary of the causes of renal stones with emphasis on diet and vitamins. There are some charts of various foods and diets. For those who wish to analyze stones, there are some very good chemical qualitative methods of testing stone compositions. Briefly, various operations are described and illustrated. An ample bibliography is supplemented. All surgeons, as especially urologists, will benefit greatly by reading Renal Lithiasis, especially in line with Luby and Albright's recent works on dissolving stones *in vivo*.

DAVID H. SCHNEIDER, M. D.

Fractures: By Paul B. Magnuson, M. D., F. A. S. C. Philadelphia, J. B. Lippincott Co., 1942, 4th Edition. Pp. 511. Price, $5.50.

This is the fourth edition of a book which has proved to be very popular among the profession. It merits the popularity mainly because it is practical and shows satisfactory methods of treating the different fractures. The text is clear and concise in its description of methods and is happily not prolix. The illustrations are excellent.

The reviewer has little but praise for this book. It is a very reliable guide to the treatment of fracture. In certain instances the author, as he says in his preface, has given prominence to the method he prefers, with which one may occasionally disagree slightly, but not completely. The reviewer feels that one of the few obvious imperfections is the lack of satisfactory illustrations and didactic description of internal fixation of the hip.

HOWARD MAHORNER, M. D.

Dr. Bard of Hyde Park: By J. Brett Langstaff. New York, E. P. Dutton & Co. Inc. 1942. Pp. 365, illus. Price, $3.75.

This biography of the most famous of New York physicians in Revolutionary times, is a delightful account of a distinguished man as well as a most fascinating record of medical practice of almost 200 years ago. Dr. Bard was the son of one of the best known doctors of New York. His family was well to do and young Bard had the opportunity of obtaining a splendid training in medicine. He spent some years in Europe and most of the time in Edinburgh and had advantages which few young doctors in the colonies had at that time. As he was a man of indefatigable energy and great ambition, he early conceived, while still a student, of establishing a medical school in New York. His

intellectual equipment was such that it was not a difficult matter for him to interest others in the opening of a medical school. While it is true that the primary endeavors were not entirely successful, ultimately through this most ambitious and capable physician there was established a medical school which has become the medical department of Columbia University and of which he was the first and for many years the Dean.

Bard was not only interested in scientific and pedagogic medicine, more particularly in botany and materia medica, but he had an enormous practice. It was said of him that any one in New York City of any prominence who became sick sooner or later was seen by this well known consultant and practitioner.

Bard was a medical man essentially but in those days the medical man was also an obstetrician. His book on "Theory and Practice of Midwifery" was the most popular book on obstetrics in his day and was sold all over the United States.

Rather interesting as a sideline of his medical activities, he was responsible for the establishment of a botanical garden which ultimately became the property of Columbia University, on the land on which nowadays stands Rockefeller Center. This land was purchased for almost nothing and at the present time the ground rent is well into the millions.

Bard's father established a country seat for himself in Hyde Park which must have been a truly wonderful estate. Bard Senior had difficulty, due to the revolutionary times, in maintaining this estate but ultimately his son inherited it and they were able to keep it in the family. Hyde Park is well known to present day Americans as the home of our President. The Roosevelts were already established at Hyde Park and were intimately connected with the Bards. One of the Roosevelt family studied medicine. After eight years of practice he retired to Hyde Park where his son James and his grandson, Franklin Delano Roosevelt succeeded Sam Bard as senior warden of the Hyde Park church.

The most publicized event in the life of Bard was probably his care of Washington, when according to the writer of the day, he was able to save the life of the President, when he had an enormous carbuncle on the thigh which Sam Bard, with his father in consultation, opened and drained. Rather interesting that for his attendance on the then President, Dr. Samuel Bard charged approximately 60 pounds, while Dr. John Bard, his father, made a charge of 25 pounds for his consultative advice. Fees that were charged at that time were not large but apparenty the Bards were good chargers and because of their enormous practice both the father and son amassed comfortable fortunes.

It would be impossible to recount all of the activities in the fields of medicine, of science and of civic betterment and of intellectual activities that Bard was interested in, furthered and often originated. He was a great physician and a great man. Those who read of him will enjoy the masterful way his life is presented to the reader by Mr. Langstaff.

J. H. MUSSER, M. D.

Medical Application of the Short Wave Current: By William Bierman, M. D., 2d ed.; with a chapter on Physical and Technical Aspects by Myron Schwarzschild, M. A. Baltimore, William Wood, 1942. Pp. 344. Price, $5.00.

This rather extensive review of the subject in the enlarged second edition of Bierman's book is quite complete in detail. The extent of the subject in general can be appreciated from the index, which in itself covers twenty-three pages in double column. The text includes the recording of the application of the short wave diathermy to most medical conditions, and its value is impartially appraised in the comments by the author.

The history of the discovery and the development of the modern application of diathermy by short wave is completely and interestingly told. Likewise, the explanation of the physics of the application of short wave and the technic are completely described and well illustrated. These chapters are further emphasized in Chapter V on Specificity. In the succeeding chapters the application of this therapy to the long list of conditions is completely described and evaluated. The work of authorities in each of the subjects is quoted at face value. There does not seem to be any attempt to lead one to believe that this therapy is a panacea, but rather to recite what has and can be done.

The author seems to indicate quite clearly that there is a difference in the approach to the treatment of pathological conditions by means of short wave over other and more orthodox means, and that the treatment by short wave therapy should be well understood, before being attempted. Your reviewer agrees most heartily in this concept, and would like to add that the same complete understanding should be had of any physical application other than short wave that is made.

The ever increasing popularity of physical means in the treatment of pathological conditions of every nature makes it necessary for all members of the medical profession to understand the different modalities; therefore, this book on short wave should be read, to get a well rounded idea of what can or cannot be done with short wave therapy in the light of our present knowledge of the subject.

WILLIAM A. LURIE, M. D.

The Antigonadotropic Factor With Consideration of the Antihormone Problem: By Bernhard Zondek and Felix Sulman. Baltimore, Williams and Wilkins Co., 1942. Pp. 125. Price, $3.00.

This small (185 pages) but comprehensive monograph is a valuable contribution to the subject of "antihormones," which is as yet little understood.

Collip in 1934 advanced a therapy to explain the fact that animals long treated with thyrotropic hormones of the anterior pituitary would become resistant to that hormone. He found that when normal white rats were given thyrotropic hormone their basal metabolic rates were markedly increased. Yet if large doses of the hormone were administered the B. M. R. fell to as low as —29%. The serum of these animals when injected into normal animals was capable of inhibiting the thyrothropic effect of injected hormones. This inhibiting agent found in the serum of animals who have been treated with thyrotropic hormones, capable of producing this inhibiting phenomenon, was termed by Collip and Anderson an "antihormone." Collip stated that "for each hormone there may be an opposite or antagonistic principle." This antagonist is present in the normal subject but may not be detected until it exceeds in amount the hormone substance with which it is balanced. Whether or not these inhibiting substances may be properly called antihormones or must merely be considered antibodies produced by protein antigens is still widely debated. Werner feels that they are true antibodies. Twombly, who has demonstrated that long time estrogen therapy does not produce refractory phases in animals, feels that there is no such thing as an antihormone, but merely a protective substance of the nature of a protein antibody. Thompson feels that they should be considered immune bodies but should properly be called "antihormones" with as much rationale as we talk about antitoxins.

As early as 1926 Zondek in Germany and Philip Smith in the United States had independently discovered the occurrence of a similar phenomenon with the use of the gonadotropic hormones, i. e., female animals long treated with gonadotropic hormones of the anterior pituitary would show a retrograde involution of the genital tract. Collips' theory advanced in 1934 explained this phenomenon on the basis of an antihormone to that of the gonadotropic hormone. Zondek and his collaborators have contributed largely to the subject of "antigonadotropic factors" and much of their experimental work, some of it published for the first time, appears in this monograph.

The clinical importance of the antihormones rests upon the fact that they may produce a refractory state which will interfere with hormonal therapy, or that the antihormones may come to be of value in the therapy of endocrine dysfunctions. Thus, Duff, who administered gonadotropic hormones to females with dysmenorrhea and to males with hypogonadism, was able to show that after several months the serum of these patients contained an antihormone which tended to decrease the effectiveness of further therapy.

This book is divided into five chapters. The first chapter is quite brief and deals with the history of the discovery and conception of antihormones. Chapter II considers Collips' theory. Chapter III is devoted to the antigonadotropic factor and contains a review of a vast amount of research work in this field done by the authors (particularly Zondek). Some of it is published here for the first time. It of course adequately reviews the contributions of others. Chapter IV is by far the most fascinating so far as the clinician is concerned, for it considers the "clinical significance of the antihormones" and gives some hint as to the role this newer knowledge may come to play in organotherapy. Chapter V concerns itself with a brief consideration of the mechanism of the antigonadotropic reaction. A comprehensive bibliography and good index concludes the book.

This monograph, though of limited appeal, is an interesting and valuable contribution and is recommended to those interested in endocrine therapy.

B. B. WEINSTEIN, M. D.

The Hemorrhagic Diseases and the Physiology of Hemostasis: By Armand J. Quick, Ph. D., M. D. Springfield, Illinois, Charles C. Thomas Company, 1942. Price, $5.00.

Armand Quick renowned for his contributions to the physiology of hemostasis distinguishes himself further with this excellent monograph on the hemorrhagic diseases. His research accomplishments and exemplary presentation of the Beaumont lectures fitted him well to the timely task of summarization and evaluation of our knowledge of the physiology of hemostasis.

In condensed three hundred and forty pages he placed a minimal twenty-four illustrations and eight demonstrative tables to present a thorough laboratory and clinical survey of the subject. This book must not be misunderstood to be a treatise on hematology; it is limited strictly to its subject. The arrangement is excellent, the historical outlines are interesting. The average clinician will find the encroachments on physiological chemistry easily readable. The factors: thrombin, prothrombin fibrinogen, thromboplastin and platelets have each a full chapter of consideration. The fundamentals of coagulation are presented and related. The anticoagulants are classified, evaluated and clinically analyzed.

There are seven chapters devoted to the fundamentals. The principle known entities classified as hemorrhagic diseases are then completely covered with emphasis on diagnosis and therapy. Most emphasis is, however, on hemorrhagic diathesis of avitammosis K which is covered in unequal completeness. An appendix of thirty pages presents the technic of practical clinical studies essential to a diagnostic survey.

All clinicians should enjoy the capable work the references of which carry one well into 1942. This work and Quick's other efforts have certainly added impetus to the study of the hemorrhagic disease. We should all appreciate the significance of this stimulus; none of us can afford to be ignorant

of the wealth of knowledge Quick renders so easily available.

GORDON MCHARDY, M. D.

A Venture in Public Health Integration; The 1941 Health Education Conference of the New York Academy of Medicine: New York. Columbia Press, 1942. Pp. 56. Price, $1.00.

This small volume presents certain papers given at the 1941 New York Health Education Conference. These papers should be of interest to doctors, health officers, nurses, and others who are attempting to integrate the problems and programs of the official health departments of the voluntary health organizations and of the medical profession.

R. H. HEEREN, M. D.

Tables of Food Values: By Alice V. Bradley. Peoria, Illinois, Manual Arts Press, 1942. Pp. 224. Price, $3.50.

This new edition of an extremely useful book represents extensive revision and enlargement. The material presented is accurate and completely up to date. The book is introduced by two chapters, the first of which deals with the components of the diet, the second with methods of diet calculation and menu planning. The function of each of the essential foods is briefly indicated and the constituents of an adequate diet are outlined. Foods which are good sources of the various dietary essentials are listed in several tables. The main portion of the book is divided into two parts. Part I consists of twenty-seven tables which give the values of average servings, or of common household measures, of various classes of food. Part II consists of a similar group of twenty-seven tables giving values for 100 gram portions of the same foods. Values for a number of prepared foods are included together with the recipes on which the calculated values are based. The complete nutritive value of any one food, raw, or cooked, is given in a single table which is a most practical arrangement, saving the reader both time and effort. Values are given for the following components: protein, fat, carbohydrate, calories, calcium, phosphorus, iron, vitamins (A, B_1, B_2, C) and the reaction produced in the tissues (acid, or alkaline). The charts give all the data needed for the rapid and accurate calculation of specific diets.

This excellent book is highly recommended for physicians, as well as for dieticians, teachers, and others interested in nutrition.

GRACE A. GOLDSMITH, M. D.

PUBLICATIONS RECEIVED

Williams & Wilkins Company, Baltimore: The Role of Nutritional Deficiency in Nervous and Mental Diseases, Proceedings of the Association for Research in Nervous and Mental Diseases, Volume XXII. Allergy Anaphylaxis and Immunotherapy, by Bret Ratner, M. D. Human Neuroanatomy, by Oliver S. Strong, M. D. and Adolph Elwyn, M. D. The Physiological Basis of Medical Practice, by Charles Herbert Best, M. A., M. D., D. Sc. (Lond.), F. R. S., F. R. C. P. (Canada) and Norman Burke Taylor, M. D., F. R. S. (Canada), F. R. C. S. (Edin.), F. R. C. P. (Canada), M. R. C. S. (Eng.), L. R. C. P. (Lond.). Injuries of the Skull, Brain and Spinal Cord, edited by Samuel Brock, M. D. An Atlas of the Basal Ganglia, Brain Stem and Spinal Cord, by Henry Alsop Riley, M. A., M. D.

Lea & Febiger, Philadelphia: The Therapy of the Neuroses and Psychoses, by Samuel Henry Kraines, M. D.

Charles C. Thomas, Springfield, Illinois: Whooping Cough, by Joseph H. Lapin, B. Chem., M. D.

The Macmillan Company, New York: Managing Your Mind, You Can Change Human Nature, by S. H. Kraines, M. D. and E. S. Thetford.

Philadelphia Medicine, Philadelphia: A Guide to Practical Nutrition. A series of articles on nutrition, sponsored by the Committee on Nutrition and Deficiency Diseases of the Philadelphia County Medical Society.